John
Cranford,
M.D.

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Hoffmann, Friedrich

A

DISSERTATION

ON

Endemial Diſeaſes;

OR,

Thoſe Diſorders which ariſe from particular Climates, Situations, and Methods of Living;

Together with a

TREATISE

ON THE

Diſeaſes of TRADESMEN,

To which they are ſubject by their particular Callings;

With the Method of avoiding and treating them.

The First by the Celebrated

FREDERICK HOFFMAN,

Profeſſor of Phyſick at *Hall* in *Saxony*, and Phyſician to the late and preſent King of *Pruſſia*.

The Second

By *BERN. RAMAZINI,*

Profeſſor of Phyſick at *Padua*:

Newly tranſlated with a Preface and an Appendix by Dr. JAMES.

L 1402

LONDON:

Printed for THOMAS OSBORNE in *Gray's-Inn*, and J. HILDYARD at *York*. 1746.

Crawford

THE AUTHOR's PREFACE.

WE find it both recorded in Authors, and mentioned in common Converſation, that Nature, the kind Parent of all Things, is oftentimes, traduced by impious Men as having provided for Mankind in ſeveral Things, either too ſcantily, or without ſufficient Decency. And no Part of this calumnious Charge is more unjuſt, than that of her having laid every one under a Neceſſity of daily Bread, for maintaining and ſupporting the Life that would otherwiſe be deſtroyed: For were Mankind diſengaged from that Taſk, they would acknowledge no Law at all, and the Earth we live upon would have a quite different Aſpect from what it has now: Hence Perſius *very ingeniouſly makes the Belly, and not the artificial Hand, to be the Maſter and Inventor of Arts.*

Quis expedivit Pſittaco ſuum Chaire,
Picaſque docuit verba noſtra conari?
Magiſter Artis, Ingeniique largitor
Venter. ——————In Prolog.

So that we may juſtly aſſert, that this Neceſſity which inſpires the very irrational Animals with Ingenuity, is the Source of all Arts, whether Mechanic or Liberal; which indeed are

no trivial Advantages to Mankind, though this Good, like all other human Things, is not without a Tincture of Evil. For we must own that some Arts intail no small Mischiefs upon the respective Artisans, *and that the same means by which they support Life, and maintain their Families, are oftentimes the Cause of grievous Distempers, which hurry them out of the World. Now, having observed this frequently in the Course of my Practice, I bent all my Thoughts upon writing a Treatise of the Diseases of Tradesmen or Artificers: But, as in the Cultivation of mechanic Arts it generally falls out, that if any new Invention is discovered by an Artist, it appears at first with some Imperfection and Roughness, and is afterwards brought to Perfection by the Diligence and Industry of others; so in the Republic of Letters, the same Inconveniency is the usual Reward of new Attempts. And that this Treatise of mine will undergo the like Fate, I have several Reasons to believe; particularly, because it has something in it that is new. For I do not know, that any Author has yet appeared in this Field, which may afford no contemptible Crop of Contemplations relating to the Subtilty and Efficacy of Effluviums. So, I freely confess that what I now publish is but an imperfect Performance, or rather an Incitement to others to lend their helping Hands, till an intire and compleat Treatise is obtained, that may deserve well of the Commonwealth of Physic. It is certain we owe this Piece of Service*

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to the miſerable Condition of Tradeſmen, whoſe Profeſſions even of the meaneſt and moſt ſordid Kind are ſo advantageous and neceſſary to Mankind: This Debt, I ſay, is due from Medicine, the nobleſt of all Sciences, as Hippocrates *calls it, which gives Relief to the Poor, and diſpenſes Cures* gratis.

If we conſider what a vaſt Difference there is between the Europeans *and the* Americans, *or the other barbarous Nations of the new World, we cannot but be ſenſible, that Mechanic Arts have contributed very much towards the civilizing of Mankind. And accordingly we find it recorded in various Monuments of Antiquity, that the Founders of great Cities and Kingdoms took a particular Care of Workmen and Tradeſmen. For they inſtituted Colleges and Societies of Artificers:* Plutarch *informs us, that* Numa Pompilius *was much admired and valued for dividing Artiſts according to their reſpective Trades; So that the Muſicians, for inſtance, were in one Claſs or Company, the Goldſmiths in another; and ſo of the Architects, Dyers, Shoemakers, Blackſmiths, and others. We read likewiſe in* Livy, *that in the Conſulſhip of* Appius Claudius *and* P. Servilius, *they inſtituted a College or Company of Merchants, under the Title of* Mercuriales, *ſo called, becauſe they worſhipped* Mercury *as the Preſident of Merchandiſe. And* Plato *in his Book* de legibus, *ſays, Tradeſmen are conſecrated to* Vulcan *and* Minerva, *two Deities who work hard.* Sigonius

de

de Jure antiquo Romanorum, *and* Pancirolus de notitia utriusque Imperii, *shew at large to what Rights and Privileges these Companies were intitled: For they were admitted to vote and enjoy Posts of Honour, and therefore* Sigonius *says, the Tradesmen were listed into the Number of the Citizens of* Rome. *We find Tradesmen mentioned in the Pandects and the Codes: And in* Caius J. C. in l. 1. ff. Quod cujuscunque universitatis nomine vel contra eaum egatur, *We have a Description of these Societies of Tradesmen, together with their Laws and Privileges, insomuch that they were allowed to transact their own Affairs like a Republic, to receive Legacies, and to make By-laws to themselves, provided they did not hinder the public Laws, as* Paulus *has it,* in l. cum Senatus ff. de rebus dubiis. Suetonius *writes that the Emperor* Vespasian *was a great Incourager not only of liberal, but even of illiberal and mechanic Arts, and always gave the meaner sort of Workmen the Opportunity of being constantly imployed, and of earning Money; in so much that when a certain Architect boasted that he could with small Charge add a great Pile of Building to the Capitol, he made Answer he would rather go on in imploying and maintaining his poor People.*

Now since both Antiquity and the Age we now live in, shew Laws in all well-governed Cities, calculated for the good Order and Reputation of Tradesmen; it is but reasonable that Medicine should contribute it's Share, for the

the Benefit and Comfort of those of whom the Law has been so tenderly careful, and display itself in a particular Manner (a Thing hitherto neglected) for the Safety of Tradesmen, that they may follow Trades without injuring their Health. For my own Share, I have done what I was able to do, and thought it no Indecency to step sometimes into the meaner Sort of Work-houses, and view the Secrets of Mechanic Arts; especially now that almost all Physic is reduced to Mechanism, and the Schools sound of nothing so much as the Automaton, *or Machine of the Body. In the mean time I hope all candid Physicians will excuse my Imperfections, upon the Consideration, that all Trades are not followed and practised in one City or Country, there being different Trades according to the Variety of Countries that may give rise to Diseases. The Shops, or Work-houses of Tradesmen are the only Schools in which we find any satisfactory Knowledge of these Matters; and out of these Places I have endeavoured to pick whatever might best please the Taste of the Curious; and chiefly indeed to suggest such Cautions, as may serve to prevent and cure the Diseases to which Tradesmen are usually subject. When a Physician therefore is called to visit one of the poorer and meaner sort of People, I would advise him not to feel the Pulse as soon as he comes into a Room, without inquiring into the Circumstances of the Patient, nor to stand, as it were, in a transient Posture, to prescribe where the Life of Man is concerned; but to sit down*

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by the Patient, let the Place be never so sorry, and carefully interrogate him upon such Things, as both the Precepts of our Art, and the Offices of Humanity require us to know. The Divine Hippocrates *informs us, that when a Physician visits a Patient, he ought to inquire into many things, by putting Questions to the Patient and the By standers.* When you come to a sick Person, *says he,* you must ask what Uneasiness he is under, what was the Cause of it, how many Days he has been ill, how his Belly is affected, and what Food he eats: *To which I would presume to add one Interrogation more; namely,* what Trade he is of. *For though this Question may be referred to the morbific Causes, yet I reckon it very convenient, and absolutely necessary, when we have to do with vulgar ordinary Patients: But I find it very seldom minded in the common Course of Practice, or if the Physician knows it without asking he takes but little notice of it: Though at the same Time a just Regard to that, would be of great Service in facilitating the Cure. So, I choose to publish this Treatise of mine for the good of the Republic, or at least for the benefit of Tradesmen: And though it is not very artfully writ, I hope the Reader will vouchsafe it a civil Reception.*

Da veniam Scriptis, quorum non Gloria nobis Causa, sed Utilitas, Officiumque fuit.

Dr. JAMES's

PREFACE.

THE following Sheets were intended for the Medicinal Dictionary; *but the Desires of the Publick to see that Work compleated, and the Impatience of the Booksellers to have it finish'd, oblig'd me to omit it, tho' of Importance sufficient to deserve the Notice of the Publick. The Subject of* Endemial Distempers *has, from the Time of* Hippocrates, *been thought worthy of the most serious Consideration. A Detail, therefore, of almost all the Distempers to which most of the Nations in the World are subject, accounted for, from their Air, Water, Situation, Diet, and Habits, and this by the celebrated* FREDERIC HOFFMAN, *cannot fail being both useful and entertaining.*

The other Part, wherein the Diſeaſes which affect Artificers peculiarly, in conſequence of their Trades and Employments, is of ſo much Moment, as to merit eminently the Conſideration of thoſe Phyſicians, whoſe Duty it is to conſult the Health of ſo many thouſand Tradeſmen as inhabit this vaſt City.

Bernardini Ramazini, *Author of this Treatiſe, was born in the Month of* November 1633, *at* Carpi, *a ſmall Town about ten Miles diſtant from* Modena; *and as his Parents, no doubt, obſerv'd the happy Dawnings of future Greatneſs in the Genius of their young Son, they enter'd him, for the ſake of Claſſical Learning, in the College of* Jeſuits, *where the ſurpriſing Progreſs he made, render'd him the Darling of his Maſters, and the Admiration of his fellow Scholars.*

Having finiſh'd his Claſſical Studies, he, about the 19th Year of his Age, went to Parma, *where for three Years he applied himſelf with ſo much Care and Induſtry to the various Branches of Philoſophy, that he there acquir'd no leſs Glory and Honour than he had done in the former*

mer Seminary. After this, being in a kind of Hesitation whether he should apply to Law or Medicine, he at last resolv'd entirely to follow the latter, of which he became so much Master, that in three Years he was, by the University of Parma, *honour'd with his Diploma, as Master of Arts, and Doctor of Medicine.*

Ramazini, *however, convinced that Theory without Practice could never constitute a genuine Physician, went to* Rome, *where, with universal Applause, he studied the Practice of Medicine under* Antonius Moria Rubens, *who finding him an ingenious and skilful Physician, by his Influence settled him in an adjacent Town. But finding his Health, which in his Youth was generally bad, impair'd during his Stay in his new Residence, he thought a Change of Air expedient, and for that Reason return'd to* Carpi, *his native Climate, where he gradually recover'd, married a Woman of considerable Note, and soon obtain'd both the Intimacy and Esteem of all the Men of Learning and Distinction in the Neighbourhood, at whose De-*

ſire he went to Modena *in order to practiſe.*

But as the brighteſt Geniuſes ſometimes meet with the keeneſt Oppoſition, ſo a falſe Principle of Emulation, or rather a ſordid and brutal Malice, prompted the Phyſicians and Profeſſors of Modena *to do all they could to diſcredit a Man whom they look'd upon as ſo formidable a Rival. But the Merit of* Ramazini *ſoon triumph'd over the Malice of his Enemies; for in* 1682 *he was created Profeſſor of the Theory of Medicine in the Univerſity of* Modena, *where he diſcharg'd that Office with ſingular Applauſe for about twenty Years, was employ'd by Perſons of the firſt Diſtinction, and publiſh'd ſeveral excellent Works of a Medicinal, Philoſophical and Poetical Nature. About this Time he was created Member of the* Acad. Nat. Curioſ. *by the learned* Schrækius *its Preſident, who dignified him with the Name of* Hippocrates *the third, and entreated a perpetual and uninterrupted Correſpondence with him. But Merit and Fortune had not as yet conferr'd all the Honours and Dignities they intended upon the celebrated* Ramazini; *for about the*

the End of the laſt Century, juſt as this Treatiſe on the Diſeaſes of Tradeſmen was ready for the Preſs, he received an Invitation from the Senate of Venice, *to accept of the Office of Profeſſor of Practice in the Univerſity of* Padua. *This Circumſtance gave an unexpected Shock to the Profeſſors and Inhabitants of* Modena, *who now look'd upon* Ramazini *as an Ornament to their Univerſity, and a common Bleſſing to their City: But notwithſtanding all the Motives they ſuggeſted, and all the Entreaties they uſed in order to ſecure him to themſelves, he had ſtill a laudable Ambition reigning in his Mind, and thought it an Honour to finiſh his Days a Member of an Univerſity ſo celebrated as that of* Padua, *and accordingly accepted of the Chair, immediately after which he publiſh'd this Treatiſe on the Diſeaſes of Tradeſmen; and tho' we frequently find that the Publick is blind to the genuine Merit of ſome Works, yet it has done ſufficient Juſtice to this, ſince it has been tranſlated into the reſpective Languages of all the various Nations of* Europe, *been eagerly bought up almoſt at*

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any Price, and juſtly become what we commonly call a ſtandard Book.

Ramazini, *when enter'd on the Diſcharge of his Office at* Padua, *was no leſs an Ornament to it than the celebrated* Sanctorius, *who had formerly executed it; for never did Students of all Nations ſo attentively liſten to the Dictates of a Maſter; and never did a Maſter take ſo much Pleaſure, or uſe ſo much Pains, in forming the Minds of Students, and repleniſhing them with the moſt reaſonable and ſalutary Maxims of Practice. In a Word, his ſingular Learning, the Sweetneſs of his Temper, the Candour of his Judgment, the Uprightneſs of his Intentions, the Honeſty of his Morals, the Induſtry with which he diſcharg'd his various Offices, and the Succeſs of his Practice render'd him ſo conſpicuous, that he was created honorary Fellow of almoſt all the Academies and Univerſities of* Europe, *and courted by all his learned Contemporaries, inſomuch that it was thought a ſingular Honour to be one of* Ramazini's *Correſpondents. But as human Bleſſings are not intended to be perpetual, this Benefactor of Mankind began at laſt to feel the natu-*

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ral Effects of Age, and ſtrong Application of Mind; for he was frequently ſeiz'd with a violent Palpitation of the Heart, and a Diſorder of the Eyes, which terminated in perfect Blindneſs. Theſe Misfortunes he bore with a Philoſophical Patience, or rather a truly Chriſtian Fortitude, till the Month of November 1714, *when putting on his Gown, in order to attend his Students, he was ſeiz'd with a violent Apoplexy, which in twelve Hours Time, put an End to his Life, notwithſtanding all the Methods uſed in order to preſerve it.*

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A DISSERTATION ON DISEASES

Which arise from particular Climates, Situations, and Methods of Living, usually called

Endemial Distempers.

THE Word *Endemial* is derived from Ἐν, *In*, and Δῆμος, *the People*, and is an Epithet of those Diseases which are peculiar to the Inhabitants of certain Nations, or Countries. With these Diseases and their respective Natures the Physicians ought to be well acquainted; for, according to *Hippocrates*, in the Beginning of his Book, *de Aere, Locis, & Aquis*, "The Man, who intends to practise Physic in "such a Manner as not to be a Reproach to his "Profession, must have a due Regard to the vari- "ous Seasons of the Year, their different Influen- "ces, and the several Diseases they are capable of "producing. He must, also, be well acquainted "with the State of the Winds peculiar to each "Country, and the Qualities of the Waters its "Inhabitants drink. He must carefully advert to "the Situations of Towns, and the peculiar Na- "ture of the Country in which they lie, accu-

" rately conſidering, for Inſtance, whether it is " flat and hot, or mountainous and cold. He " muſt, alſo, reflect with what Diet and Regi- " men its Inhabitants are principally delighted; " whether, for Inſtance, they are addicted to " Drinking, Gluttony, and Idleneſs; or habituated " to various Exerciſes, accuſtomed to Labour, " and fonder of Eating than of Drinking. Each " of theſe Circumſtances to be accurately inve- " ſtigated and diſcovered; ſince, by a Knowledge of " theſe, the Man, who is even a Stranger to a Ci- " ty or Country, may become acquainted with " its particular Nature, and ſo effectually diſcover " the ſeveral Diſeaſes to which its Inhabitants are " ſubject, that he muſt be far more capable of " preſcribing for them, than the Man who does " not ſufficiently advert to theſe Circumſtances."

The Diſeaſes, by which the far greater Part of Mankind are cut off, are either *Epidemical*, or ſuch as, ariſing from a bad Conſtitution of the Air, and the Viciſſitudes of the Weather, rage and exert their Fury at particular Seaſons; or *Endemial*, and familiar to certain Nations and Countries, in Conſequence of the Diet and Regimen of the Inhabitants, the Air they breathe, the Exhalations with which the Atmoſphere is impregnated, the Water, the Wine, and the Malt-liquors they drink. Theſe two Species of Diſeaſes agree in this, that both ſeize a conſiderable Number at one and the ſame Time: But they differ in this, that the *Epidemical*, ariſing from the Viciſſitudes of the Weather, the Influence of the Winds, and the Influx of the Stars, laſt only for a certain limited Time; whereas thoſe of the *endemial* Kind, drawing their Origin from a fixed and ſtated Cauſe eſſential to the Country, remain without Change or Variation for many Years. In treating of this laſt

Claſs

Claſs of Diſeaſes we ſhall not only conſider ſuch as are peculiar to *Europe*, but, alſo, thoſe which are familiar to the other Parts of the World.

To begin, therefore, with *Europe*, that ſtrumous Swelling of the Neck, peculiar to the Inhabitants of ſome of its high and mountainous Parts, is not, as is commonly believed, produced by the Snow-waters, which are alſo found in other Parts, but rather by drinking ſuch Waters, as, paſſing through calcarious Mountains, are coarſe, heavy, and richly impregnated with a calcarious Earth; for which Reaſon drinking the Waters of certain Springs produces a ſtrumous Swelling of the Neck. The *wiſs*, the *Griſons*, and the Inhabitants of *Walliſerland*, are highly ſubject to this Diſorder. Thus *Munſter*, in the third Book of his *Coſmographia*, informs us, "That the Inhabitants of *Switzerland* "and *Walliſerland* are ſo afflicted with ſtrumous "Swellings, that the Weight of the *Strumæ* "proves a Hindrance to their Speech; and that "ſuch Women as give ſuck are ſometimes "obliged to throw them over their Shoulders, like "Bags, that they may not prevent the Sucking of "the Infant."

This Account is confirmed by *Wagnerus*, in his *Hiſt. Nat. Helvet.* In ſome particular Parts of the *Griſons* Country, there are Waters of ſuch a peculiar and unhappy Quality, as to produce large ſtrumous Tumours of the Neck, whether they are drank, or only uſed for boiling and preparing Aliments. Nor is this Misfortune peculiar to the Natives of theſe Places; for Foreigners, who reſide in them for ſome Years, and uſe the Waters, though at their Arrival their Necks were very ſlender, have them rendered as large as that of a Bull, with Dew-laps hanging down from them. By theſe Tumours the Aſpect of the Patient is rendered ſo

unſeemly, and his Speech ſo vitiated, that he frequently excites Laughter in thoſe who ſee the former, or hear the latter: But the lower and more abject of the Inhabitants, glorying in this Deformity, by way of Contempt, call thoſe who have the good Fortune to eſcape it *Gooſe-necks*. In the Village of *Flach*, in the Canton of *Surich*, there is a Spring, the Waters of which, when drank, generally produce theſe ſtrumous Tumours of the Neck; for which Reaſon it is, by the Inhabitants, called the *ſtrumous Fountain*. Not only thoſe who live near the *Alps* and *Pyrenæan* Mountains are ſubject to this Diſorder, but alſo, according to *Ortelius*, the Inhabitants of ſome other Countries, where the Misfortune at preſent almoſt ceaſes to be *endemial*, becauſe the Natives, conſcious of the Effects of particular Springs, abſtain from them. In ſome Towns on the *Black Foreſt*, near which there are metallic Mines, ſuch as *Wildemann* and *Ardreaſberg*, almoſt all the Women are afflicted with ſtrumous Swellings of the Throat, becauſe they uſe coarſe metallic Waters, impregnated with the Particles of the Stones through which they paſs. In the Town of *Conſtadt*, in *Tranſylvania*, ſtrumous Swellings are very frequent, in conſequence of drinking the Waters. In high and mountainous Countries the cold and penetrating Air contributes not a little to the Production of this Diſorder, becauſe, by inſpiſſating the Juices in the ſubcutaneous Glands, near the *Aſpera Arteria*, it obſtructs their free and eaſy Circulation. Hence the ſmall Ducts, Veſſels, and Pores, being ſtuffed with a viſcid Humour, produce a preternatural Largeneſs and Tumour of the Throat. Women are more ſubject to ſtrumous Swellings than Men, becauſe uſually the Veſſels and Fibres about their Breaſts and Necks are conſiderably diſtended, eſpecially during Preg-

Pregnancy and Labour. This Circumſtance is in ſome meaſure obſerved immediately after Conception, ſince at this Time the Veſſels about the Neck become conſiderably larger than they were before. Hence the Ancients, in order to diſcover the Virginity of a young Bride, uſed to meaſure her Neck before ſhe admitted of the firſt Embraces of her Huſband. Thus *Catullus*, in the Marriage of *Peleus*, tells us,

Non illam Nutrix orienti Luce reviſens
Heſterno Collum potuit circumdare Filo.

A Hydrocele and Sarcocele are very commonly incident to the Inhabitants of *Languedoc* and *Provence*; theſe Tumours are produced when the Blood, returning ſlowly through the ſpermatic Veins, ſtagnates in them; hence the Serum is either ſeparated from the Blood, and a Deflux[illegible] in the Scrotum and Membranes of the Teſtes produced, or a fleſhy and fungous Excreſcence is formed by the viſcid Serum; for which Reaſon this Diſorder ſometimes happens to old Men, to ſuch as are of a melancholic Habit, or accuſtomed to a ſedentary Life: The immoderate Uſe of Cheſnuts, large Quantities of which are produced in *Languedoc* and *Provence*, ſeems to be the Cauſe, why their Inhabitants are, in a peculiar Manner, ſubject to theſe Diſorders; for, by the frequent Uſe of theſe, the Lymph and Blood are ſo inſpiſſated, as to paſs ſlowly through the ſmall ſpermatic Veins, the Situation and Direction of which are perpendicular. The Inhabitants of *France* in general are alſo highly ſubject to Fevers, not only of the intermittent, but alſo of the continual, malignant, putrid, ſlow, and hectic Kinds, which frequently prove fatal to them. The Circumſtances, principally contributing to the Produc-

tion of theſe Diſeaſes, are their moiſt Aliments, their liberal eating of ſtrong Soups, and autumnal Fruits; their uſing Food without Salt, their drinking Water copiouſly, and but little Wine. By ſuch a Regimen the Blood is highly attenuated, and a large Collection of Serum accumulated; which, if not duly purged off, eſpecially in ſpongious Bodies, deprived of a proper Strength of the Fibres, and expoſed to ſoutherly Winds, ſtagnates in the Veſſels, and diſpoſes to Fevers, Ulcers, and Putrefactions. Beſides, not only the Children, but alſo the Adults of this Nation, are much afflicted with Worms of an uncommon Size, which Misfortune is produced by their moiſt Food, their liberal Uſe of nutritive Aliments, and their drinking large Quantities of Water.

A large and numerous Train of Diſorders are *endemial* to *England*, and principally ſeize the Patients in the Autumn. The Inhabitants of *London*, the Metropolis of this Nation, are highly ſubject to Stuffings of the Head, Hoarſeneſs, Coughs, malignant Dyſenteries, Fevers, the Small-pox, and the *Fluor Albus* in the tender Sex. A cloudy Atmoſphere, richly impregnated with the moiſt Vapours of the Sea, contributes not a little to the Generation of theſe Diſorders. But no Diſeaſe is more fatal to them than a Conſumption of the Lungs, and unſeemly Defedation and Corruption of the whole Body; for by this Diſorder a great Number of the *Engliſh* are cut off. Under this Misfortune the Patient's Strength becomes languid, his Reſpiration difficult, his Cough continual, and his Lungs, upon opening his Body after Death, are found full of ſcirrhous Tubercles. This Diſorder is, in a great meaſure, produced by an Air that is thick and impregnated with the *Smoak of foſſile Coals*, which, being received by the Mouth, ſo

corrigates

corrigates and conſtricts the pulmonary Veſicles, that a large Quantity of viſcid Blood is eaſily retained in them.

This Diſeaſe, as alſo Inflammations of the Lungs, are more incident to the Nobility and People of Diſtinction and Opulence, than to the meaner Sort; becauſe the former indulge themſelves in Delicacy, Idleneſs, and Luxury, eat the moſt rich and luſcious Fleſhes, and drink large Quantities of generous Wines; by which Means Nature, eſpecially in weak and ſpongious Habits, is rendered incapable of managing the too large Quantity of Blood, and carrying on the Secretions which ought to be made from it. In Conſequence of this a large Quantity of viſcid Blood is collected, and ſtagnates in the Lungs, which are of a ſoft and vaſcular Texture; a Circumſtance which gives Riſe to the above-mentioned Diſorders; for a Phthiſis, and moſt of the other Diſorders to which the *Engliſh* are ſubject, proceed from Repletion, becauſe the Inhabitants of this Nation generally neglect Veneſection too much.

Beſides the pulmonary Conſumption, the Rickets is *endemial* to the *Engliſh*, eſpecially in the Weſtern Parts. This Diſorder ſeizes Children, and diſcovers itſelf by rendering their Heads preternaturally large, their Fleſh lax and ſpongious, their Abdomens turgid, their Eyes prominent, their Bodies weak and crooked. This Diſorder principally ariſes from a weak and flaccid State of the Nerves and Membranes, a Defect of Spirits, and an unequal Diſtribution of the nutritious Juices. Hence it is called *Rachitis*, becauſe its chief Seat is thought to be fixed in the Spine of the Back.

As for the Diſeaſes peculiar and *endemial* to the ſeveral Parts of *Italy*. At *Naples*, beſides the Venereal Diſorder, which is not accounted a Diſeaſe, except when it diſcovers itſelf by Gummata, the *endemial* Diſeaſes are red Spots on the Skin, ſometimes diſappearing, and then breaking out afreſh. Any other Species of Scurvy is unknown in *Italy*, becauſe this Diſorder is the Progeny of an impure and ſaline Lymph. *Bartholine*, in *Cent.* 5. *Ep.* 19. aſcribes theſe Spots to their Houſes and Aliments. The former of theſe are lofty and dark, and the latter conſiſt of Beef, Pork, and Cabbage, which the Inhabitants feed on in large Quantities.

The *Venetians* are ſubject to the Hemorrhoids and their ſeveral Conſequences, ſuch as painful, blind Hemorrhoids, Varices, and Fici, for which Reaſon Leeches are ſo much uſed by them, that they frequently contract Fiſtulas of the Anus. The Cauſe of theſe Diſorders is juſtly aſcribed to the liberal Uſe of *Italian* Wine. And in general, we may obſerve, that the Inhabitants of thoſe Countries in which Wines, eſpecially of the ſweet Kind, are ſpontaneouſly produced, are more ſubject to the bleeding Hemorrhoids, than thoſe who live in barren Climates, in which only Water and Malt-liquors are drank; for Wines of this Kind generate large Quantities of Blood, and eaſily throw it into Organſms, or preternatural Commotions. Hence, in conſequence of the Diſtention of the Veſſels, the Blood moves ſlowly through all the abdominal Viſcera, and by that Means regurgitates to the Veins of the Anus, through which its long and perpendicular Aſcent is very difficult.

Semi-tertian Fevers are highly *endemial* at *Rome*, as was long ago obſerved by *Galen*, (*Lib.* 1. *de Morb. Vulg. Comm.* 2.) who lived in great Splendor and Glory at *Rome*, near the *Forum* of *Agrippa*, which

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now leads to the *Pantheon*. *Fontanus* (*Schol. d Do - don. de Semitertiano*) juſtly obſerves, "That the "Stomach, its nervous Parts eſpecially, and the "Liver, are greatly injured by this Fever:" For which Reaſon it is deſervedly claſſed among the mortal Diſtempers. This Diſorder generally degenerates into a Hectic and Dropſy, by reaſon of the Obſtructions with which it is accompanied, as *Hippocrates* obſerves, in the firſt Section of the third Book of his *Epidemics*.

This Species of Fever is principally incident to the Prieſts, Nobility, Courtiers, young Perſons, and ſuch as lead an idle and luxurious Life, and live in a hot Climate; for which Reaſon it is alſo *endemial* in *Ethiopia*. In Perſons who lead idle and unactive Lives, all rich and delicate Aliments generate large Quantities of Blood, which, producing Infarctions and Obſtructions of the Viſcera, lay a Foundation for various terrible Diſtempers. *Aſclepiades* (in the tenth Chapter of the ſecond Book of *Cælius Aurelianus*) informs us, that, at *Rome*, Fevers accompanied with an Oppreſſion of Body and Mind, as alſo Lethargies, are very frequent: For the Waters of this City, excepting thoſe conveyed into it by *Mæcenas* through Aqueducts, are far from being of a ſalutary Quality. Nor is *Rome*, in the Summer-time, bleſſed with a very wholeſome Air, becauſe it is built on the Ruins of the antient City, in which, for various Purpoſes, the antient *Romans* prepared a large Number of ſpacious and ſumptuous Caves: If, therefore, at any time the *Tyber* overflows her Banks, and enters theſe Caves, the Air muſt of courſe be of an inſalubrious Quality, in conſequence of the Vapours with which it is impregnated. Beſides, in theſe Caverns large Numbers of Serpents are found; and the City, in conſequence of its Streets not being paved, is ſo

duſty in the *Dog-days*, that the Inhabitants cannot come abroad, on account of the Duſt and Swarms of Flies, which undoubtedly come from the Caverns above-mentioned.

The Epilepſy is very familiar and *endemial* to the Inhabitants of *Tuſcany*; for which Reaſon they cauterize the Heads of new-born Children, according to *Malthaſar de Vias*, *in Sylvia Regia*. This Cuſtom (according to *Hieronymus Mercurialis*, *Lib.* II. *Var. Lect. c.* 2.) alſo prevailed among the antient Inhabitants of *Tuſcany* and *Lybia*. The modern *Arabian* Phyſicians, alſo, with uncommon Succeſs, uſe the actual Cautery, for violent and otherwiſe incurable Diſorders of the Head; ſuch as Apoplexies, Hemicranias, and Lethargies, applying the Iron to what Part of the Head they think will beſt anſwer their Intention.

The Inhabitants of *Apulia* are, according to *Baglivi*, highly ſubject to burning Fevers, Pleuriſies, and other inflammatory Diſorders, which in a great meaſure draw their Origin from that Redundance of Blood, which is generated by the high Living of the Inhabitants; for here the Soil is incredibly fertile, and large Quantities of Fleſh is eaten by the Natives. Here, alſo, the Wines are black, fragrant, and rich, and the Air ſo intenſely hot, as not only to render the Inhabitants highly impatient and uneaſy, but very frequently delirious.

The Bite of the Tarantula is alſo peculiar to *Apulia*. The Wound inflicted by this Animal is moſt terrible in the Summer-time, eſpecially at the Seaſon when theſe Animals copulate: The Wound is ſucceeded by an uneaſy Senſation about the Heart, a Privation of Voice, an Oppreſſion of the Pulſe, a Blackneſs of the Extremities, and a cold Sweat, all which Symptoms ariſe from a violent Conſtriction of the nervous Parts; for the Poiſon

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of the Tarantula conſiſts of a highly active, pernicious, and quick-moving Subſtance, like Fire; which, by penetrating into the innermoſt Receſſes of the Body, excites violent ſpaſmodic Motions in the nervous Syſtem. *Baglivi* (in his *Diſſert. de Tarantula*) has wrote in a highly rational and ſatisfactory Manner on this Subject. *It is no uncommon Thing for Men treating on medicinal Subjects, to take Things for granted, and write very rationally upon ſuch Suppoſition; of this the Fable of the Tarantula is an Inſtance.* *See* TARANTULA.

In *Spain* the Inhabitants are highly ſubject to hypocondriac Melancholy, which may be juſtly aſcribed to their indolent and unactive Turn, their ſedentary Lives, and profound Speculations: Beſides, they indulge themſelves too ſoon in Venery, and drink but little Wine: Hence the more ſubtile Part of the Blood being carried off, what remains is of a thick and earthy Nature, and conſequently produces Diſorders of the Hypocondria, and extravagant Whims and Phantaſms in the Brain. Add to this, that in the Men the Hemorrhoids, and in the Women immoderate Diſcharges of the Menſes, are very frequent, becauſe the abdominal Viſcera are ſtuffed with a thick and fœculent Blood. Hence the free and equable Diſtribution of the Blood is prevented, by which means it impetuouſly flows into the extreme Parts, ſtagnates in them, and burſts the Veſſels in which it was contained. Moſt of their Nobility, and thoſe in opulent Circumſtances, are cut off by Apoplexies, which, without doubt, ariſe from a Redundance of Blood generated by their delicate Manner of Living, their drinking rich and generous Wines, and their daily Uſe of Chocolate. But it is remarkable, that the Itch and Scurvy are not known in *Spain*, tho' they daily eat large Quantities of freſh Pork; for the-

the Air of that Kingdom is highly ſubtile and penetrating, their Water pure and light, and the Food uſed without Salt. In conſequence therefore of a free Perſpiration, and an open and unobſtructed State of the cutaneous Pores, the coarſe and thick Particles of the Serum are exhaled, which, when ſtagnating in the Pores and Glands of the Skin, produce thoſe Eruptions that appear in the Itch and Scurvy.

We now come to conſider the Diſorders *endemial* to the *United Provinces*, and eſpecially *Holland*, where the Scurvy is very frequent, and draws its Origin partly from their ſtrong Food, Sea-fiſhes, and ſmoaked Fleſh, and partly from their denſe and moiſt Air, together with their bad Water. Beſides the Scurvy, the Inhabitants of theſe Provinces are highly ſubject to the Stone of the Kidneys and Bladder. Nor are theſe Diſorders more frequent in any Part, or more incident to Perſons of al Ages than in the *Netherlands*; for which Reaſon the Frequency of the Operation among them produces the beſt Lithotomiſts to be met with any where. The Cauſe of this Misfortune is juſtly to be aſcribed to their immoderate Uſe of Milk meats, Cheeſe and Acids, which are daily uſed at their Tables. But how much the Abuſe of Milk-meats and Acids contributes to the Production of ſtony Concretions is well enough known to Phyſicians.

Among thoſe who inhabit the Coaſts of the *Baltick* Sea, ſuch as the *Danes*, the *Swedes*, the *Norwegians*, the *Pomeranians*, the *Livonians*, and the Inhabitants of *Courland*, the Scurvy is an highly common and *endemial* Diſeaſe, diſcovering itſelf by Pains of the Joints, Wearineſs, and Torpor of the Members, Eruptions of the Skin, putrid Gums, and Tumours. Where the Air is fine and hot,

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where ſtrong and ſalt Aliments are not uſed, this Diſorder is unknown; hence it is ſcarcely ever ſeen through all *Greece*, *Italy*, *Spain*, and even *France*, except in ſome Parts of *Provence* and *Languedoc*, ſituated near the Sea, where the Waters are impure, ſaltiſh, and marſhy. It is, alſo, ſometimes found in *Raguſa*, which produces Waters of the ſame bad Qualities. The Scurvy is, therefore, frequent and *endemial* to theſe People, and to the Inhabitants of thoſe Northern Regions, which lie between the fifty-fifth Degree of Latitude and the North Pole, on account of their denſe, cold, and moiſt Air; their ſtrong and ſalt Aliments, their Uſe of Sea-fiſh, and their coarſe impure Water; by means of which the Blood is rendered earthy and fixed, deprived of its mild, balſamic, and ſulphureous Parts, and conſequently diſpoſed to Obſtructions and Corruption. Beſides, it is not to be doubted, but, in former Ages, this Diſorder raged in theſe Countries; though this Opinion cannot be confirmed by the Teſtimonies of Authors, becauſe no Hiſtories of theſe People are now extant; ſince the antient Phyſicians of *Greece*, *Arabia*, and *Italy*, only wrote upon the Diſeaſes, peculiar to their reſpective Countries, without touching upon thoſe incident to the Inhabitants of other Nations. But that in theſe Countries the Scurvy is generated by the Sea Air, the groſs Food, Idleneſs, and the impure Waters uſed by the Inhabitants, is ſufficiently obvious from Sailers, who, when they viſit theſe Countries, generally bring back this Diſeaſe with them, though they are Natives of other Kingdoms, and were before free from it. It is alſo to be obſerved, that the Inhabitants of theſe Countries are highly ſubject to the Gout, the Palſey, and the Dropſy, which are the Effects of a Scurvy.

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But what is very ſurpriſing is, that, beſides the Scurvy, Fevers are very common and *endemial* in *Denmark*, *Sweden*, and *Livonia*; whereas in *Norway*, *Iceland*, *Lapland*, and *Finland*, they are ſcarcely known. *Scheffer*, in the ſeventh Chapter of his *Deſcription of Lapland*, tells us, That the Inhabitants are bleſſed with an excellent State of Health, and are Strangers to moſt Diſeaſes; and that neither Plague, nor acute and burning Fevers are found among them, which we ſhall endeavour to account for in the following Manner. It is ſufficiently known, that Plagues ariſe moſt generally, and rage moſt violent in hot and ſultry Climates; for the Plague is a highly penetrating Putrefaction, generated and promoted by an incredibly active, hot, inteſtine, and moiſt kind of Motion; for this Reaſon in intenſely cold Climates, where the Fluids are concentrated, quiet, and deſtitute of a briſk and active inteſtine Motion, Putrefaction cannot be produced, nor conſequently the Plague excited and propagated.

As for Fevers, they are no more than intenſe Agitations and Commotions of the Blood and Humours, ariſing from an increaſed Tone of the moving Fibres and Muſcles, eſpecially of the Heart and Arteries. Hence the more ſenſible and ready to receive the Impreſſions of Motion the Fibres are, the greater Propenſity to Fevers is by that very Means produced; and this is the Reaſon, why Perſons of choleric Conſtitutions, young Men, and ſuch as live in hot Climates, are more obnoxious to Fevers, than phlegmatic old Perſons, People of melancholic Habits, and ſuch as live in cold Countries; becauſe the Fibres of theſe laſt mentioned are more tenſe, immoveable, conſtricted and inſenſible. Hence the Reaſon is obvious, why in *Lapland*, *Iceland*, and *Norway*, Fevers are not obſerved;

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for the Fibres of the Inhabitants, in conſequence of their tenſe and rigid State, are leſs ſuſceptible of thoſe Spaſms and tremulous Motions, requiſite for the Production both of febrile Shiverings or Heat.

From what has been ſaid, the Reaſon is alſo obvious, why, in checking and ſuppreſſing Fevers, the internal Uſe of Aſtringents is highly efficacious. Such as the *Peruvian* Bark, Preparations of Vitriol, Steel, and Alum, together with the ſtyptic Roots of Vegetables; as alſo why Aſtringents and Corroboratives, prepared, for Inſtance, of a Mixture of Alum, Turpentine, Rue and Vinegar, and applied by way of Plaiſter to the Wriſts of the Hands, and Soles of the Feet, are highly efficacious in removing the febrile Paroxyſms, becauſe all theſe Subſtances render the Fibres highly tenſe and rigid.

Beſides, according to *Scheffer*, among the Inhabitants of *Lapland*, *Finland* and *Norway*, Lippitude and Inflammations of the Eyes are very frequent, and ſometimes proceed ſo far as to induce a total Blindneſs. The Cauſe of this Misfortune is, their being obliged, from their Infancy, to live in Smoak, of which their Cottages are full, both Winter and Summer: Now it is well known how prejudicial to the Eyes Smoke muſt neceſſarily be. Further Peripneumonies, Pains of the Back and Head are *endemial* to theſe Countries, and draw their Origin from a coarſe and viſcid Blood, which, by means of the external Cold, is eaſily ſtopped in the ſmall Tubes of the Muſcles, and minute Veſſels of the Lungs. Nor is it to be forgot, that, in all the Northern Countries, a Sphacelus is very readily generated, in conſequence of the ſlighteſt external Injury done to the Parts. The Reaſon of this is ſufficiently obvious; for a Sphacelus ariſes from a

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Deſtruction of the Circulation of the Blood in any Member or Part. Now the Circulation of the Blood is hindered and deſtroyed by its being thick, coarſe, earthy, and deſtitute of an active and ſpirituous Principle, which the Blood of theſe People, and of all ſcorbutic Patients is.

Other Diſorders are alſo *endemial* to the Inhabitants of the Northern Countries, among whom we may claſs the *Ruſſians* and *Tartars*, who are highly ſubject to Chilblains, Ulcers, and Puſtules, ariſing from the exceſſive Cold, which is ſometimes ſo very intenſe, as to make their Noſes and Ears drop off; for the Cold freezes the Fluids in the Parts expoſed, by which means they become flaccid, and almoſt mortified; and hence ariſe the Stagnations of the Humours, together with the Chilblains and Sphacelations ſubſequent to them. It is a common Remedy among them, to rub the Part pinched by the Cold with Snow, till the Numbneſs ceaſes, and Senſation returns; after which they gradually advance it to the Fire, which if done ſuddenly, and without theſe Precautions, is productive of very terrible Conſequences. It is alſo to be obſerved, that theſe People are of a ſmall Stature, and their Animals, even their Oxen, without Horns, and ſcarce ſo large as an Aſs, by reaſon of the intenſe and pinching Cold, which hinders the due and equal Diſtribution of the nutritious Juices. This is obſerved by *Hippocrates*, in his Treatiſe *de Aere, Locis, & Aquis*.

In *Poland* and *Lithuania* the Diſorder, called *Plica Polonica*, is *endemial*, and well known. This conſiſts in a preternatural Bulk of the Hairs, which, being firmly conglutinated and wrapt up in inextricable Knots, afford a very monſtrous and unſeemly Spectacle. When theſe are cut, the Blood is diſcharged from them, the Head racked with Pain, the Sight impaired, and the Patient's Life frequently endan-

endangered. This Misfortune is principally incident to the *Jews*, who live in theſe Countries. Though it ſeems difficult to account for this Diſorder, and aſſign its true Cauſes, we ſhall nevertheleſs make an Attempt of this Kind. What therefore contributes not a little to its Production is, the ſordid and naſty Manner of Life to which theſe People are addicted; for they rarely comb their Hairs, ſleep in low and moiſt Rooms, and drink large Quantities of Brandy. The Waters, alſo, concur and aſſiſt in the Generation of this Diſorder. Hence *Gehema*, *in Epiſt. ad Bontekoe de Plica Polonica*, is partly of Opinion, that the Cauſe of this Diſeaſe is lodged in ſome particular Waters of *Poland*, which, if either drank, or uſed for waſhing the Body, produce the *Plica*; which he confirms by the Fate of two Soldiers, who, when intending to waſh their Bodies, had ſcarce immerſed their Heads in the Water of a certain Pond, before their Hairs were twiſted, and contracted into many Folds. Beſides theſe Cauſes, we ſuppoſe an hereditary Fault conveyed from the Parents, and which conſiſts in too great a Bulk of the Pores, and bulbous Hairs under the Skin of the Head. Hence the thick, glutinous, and nutritious Juice, produced by their coarſe Aliments, and impure Waters, is, by the Heat excited by their drinking Brandy, forced into the Cavities of the Hairs, and, ſweating through their Pores, produces this terrible Diſorder.

The Inhabitants of *Hungary*, by the Antients called *Pannonia*, and *Illyricum*, are generally much afflicted with the Gout and arthritic Diſorders, ariſing from their delicate Living, and the too liberal Uſe of ſtrong and ſpirituous Wines: This Country, alſo, abounds with ſuch Swarms of Lice, that the Soldiers and common People cannot, without the greateſt Difficulty, ſecure themſelves from

from this Species of Vermine. The hot and moiſt Nature of the Soil contributes not a little to the Production of theſe Diſorders; for, as *Conringius*, in his *Theſaur. Rerum Public.* informs us, almoſt all *Hungary*, and eſpecially the *Inferior Hungary*, is warmed by ſubterraneous Fires; which is certain from this, that, when Ditches are digged near the *Drave*, or the *Danube*, the Heat of them is ſo great, as to produce an Eruption of Sweat, as if one was in a Bagnio. And, becauſe the Country is at the ſame time moiſt and watery, Exhalations are continually raiſed in it, by which Means the Air is rendered leſs wholſome, generates Diſeaſes of the putrid Kind, and favours the Production of Lice. From the ſame Source proceeds what is commonly called the *Hungarian* Fever, which is attended with a violent Pain of the Head, obſtinate Watching, a Cardialgia, Delirium, and an Angina. Soldiers, who lie on the Ground, and eat irregularly, are highly ſubject to this Species of Fever. Beſides, in this Kingdom the Heat is very intenſe during the Day, and the Cold very pinching during the Night: Hence, Perſpiration being obſtructed, the Blood muſt of courſe be diſpoſed to Corruption. There is alſo another Diſeaſe peculiar to the *Hungarians*, which they call *Cremer*, and with which, when they are ſeized in conſequence of immoderate Eating and Drinking, they immediately fall a rubbing the Palms of their Hands, and complain of a Pain in them: But this Diſorder immediately diſappears, upon the Patient's taking a Dram of any Cordial-water. They are alſo highly ſubject to another Diſorder, which they call *Strint*, and by which they mean every Tumour or Inflammation, whether in the Mouth, the Throat, or the Anus. *Ephim. Nat. Curioſ. Decad.* 1. *Anno* 1.

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As for *Germany*, which may be juſtly divided into South and North; in the latter of theſe the Scurvy, and all the Diſorders ſubſequent to it are *endemial*; nor is there almoſt any chronical Diſorder which has not ſomething of a Scurvy complicated with it. This holds particularly true with reſpect to *Upper Germany*, and *Weſtphalia*, where the Inhabitants are fond of living, like the *Dutch*, upon Herrings, Bacon, Stock-fiſh, Oiſters, and all kinds of Sea-fiſh.

In *Weſtphalia* malignant, peſtilential Fevers are very rarely to be found, but Peripneumonies and Itches are *endemial* to the Country; becauſe the Blood of its Inhabitants is too thick and coarſe, reſembling that generated by the liberal Uſe of Bacon, ſmall Beer, coarſe Bread, commonly called *Bonpou-nickel*, and the immoderate Uſe of Brandy. This thick and coarſe Blood, ſtagnating in the Lungs, produces violent Inflammations, and, as it is richly impregnated with ſordid and recrementitious Parts, occaſions the Itch. To theſe Diſorders ſuch of the Inhabitants are moſt expoſed as are addicted to Idleneſs, and live without due Exerciſe and Motion, which are excellent Remedies, not only for the Itch, but alſo for the Scurvy.

The Inhabitants of *Holſtein* do not live long, becauſe their rich and delicate Diet, in conſequence of the Fertility of their Soil, generates a Redundance of Blood. But this is a marſhy Country, eſpecially *Dilmars*, where Waters frequently ſtagnate in the Fields, which are expoſed to frequent Inundations of the Sea; for which Reaſon peſtilential and malignant Fevers are *endemial*; and cut off large Numbers of the Inhabitants.

In the South Parts of *Germany*, ſuch as *Sileſia*, *Franconia*, *Auſtria*, and *Swabia*, where the Inhabitants uſe a more tender Food, and drink Wine,

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Conſumptions, Gouts, burning Fevers, Hemorrhages, and Inflammations, are frequently obſerved.

In *Miſnia*, eſpecially at *Leipſic*, a Diſeaſe of a ſingular Nature, and abſolutely unknown to other Countries, is highly familiar to the Inhabitants, eſpecially to Women in Child-bed, to whom it often proves fatal. It is divided into the red and white Kind, in which either red or white Spots appear on the Skin, like the Bites of Gnats. It is accompanied with a Roughneſs and Itching of the Skin, and preceded by a Fever attended with great Uneaſineſs: Sometimes this Diſorder is complicated with thoſe of the peſtilential Kind, the Meaſles, the Small-pox, and continued Fevers; and when, in the Decline of theſe Diſorders, whilſt the Patient ſeems ſecure, this Diſeaſe appears, it prognoſticates an unlucky Termination. It is the Offspring of a putrid and vapid Serum, and is, in all Probability, owing to the nice and delicate Manner of Living of the Inhabitants, who are fond of Eaſe, and great Lovers of Sweet-meats, and ſuch Delicacies; for it is not to be doubted, but by theſe Means the Serum is rendered highly impure and viſcid. And ſince pregnant Women are generally plethoric and cacochymic, Aliments of this kind muſt of courſe produce more terrible Effects upon them, than upon other Perſons in different Circumſtances. The Children of this Country are, alſo, frequently ſeized with a Tabes, or Conſumption, from Worms which breed in the Fleſh, that they appear like ſo many Shades, or Phantoms. Though thoſe who labour under this Diſorder are commonly thought to be under the Influence of Witchcraft, yet ſuch as have enquired more narrowly into this Diſorder, have obſerved Worms like black Hairs, or Cords, lodged under the Skin. Theſe Animals are uſually called *Comedones*,

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or *Gluttons*, becauſe they intercept and devour the nutritive Juices in their Diſtribution. When the Skin is rubbed with Honey, either in a Bath, or any warm Place, they come out; but when it is contracted, and braced up by Cold, they keep concealed within: The Reader, who deſires to know more of this Diſeaſe, may conſult *Sennertus*, *lib.* 5. *Praxis*, *part.* 1. *cap.* 24. Beſides, it is to be obſerved, that in no Country are the Inhabitants more bigotted and ſuperſtitious, ſince they aſcribe Diſeaſes, eſpecially convulſive Atrophies, ariſing from natural Cauſes, ſuch as a Scurvy, or Worms, to Incantations, and the Influence of the Devil. The ſame Degree of Superſtition alſo infatuates the Minds of the *Hungarians*.

In *Greece*, *Macedon*, and *Thrace*, there are few Phyſicians, becauſe few Diſeaſes, eſpecially of the chronical Kind; for their pure Air, and limpid Water, prevent Obſtructions, Indurations of the Viſcera, and Infractions of the Glands. A Phrenitis, acute, however, and other Fevers, together with Dyſenteries, are very frequent among the Inhabitants of theſe Countries; and their immoderate Uſe of excellent Summer-fruits, together with rich and luſcious Wines, contribute not a little to the Production of theſe Diſorders.

In the Iſlands of the *Archipelago*, the Epilepſy is highly frequent and *endemial*, as *Hippocrates* has alſo informed us, in his Book *de Morbo Sacro*.

At *Conſtantinople* a violent Plague rages every Year, beginning in the Spring, and ending in the cold Months of the Autumn, *October* and *November*. Various Cauſes concur to the Production of this Calamity, ſuch as the Largeneſs of the City, which contains an incredible Number of Inhabitants, and is almoſt every where ſo ſurrounded by the Sea, that the Waves beat upon its Walls. The Air,

Air, alſo, is impregnated with moiſt and agueous Exhalations, and the Climate is exceſſively hot. Now a moiſt and hot Air is productive of Putrefaction, and conſequently of the Plague, which, according to all Phyſicians, conſiſts of a Putrefaction of the moiſt, active, and penetrating Kind. To theſe Cauſes may be added the execrable Filthineſs of the Inhabitants, who throw out large Quantities of Ordure and Excrements in the Streets. Hence the Air muſt be infected, and give Birth to a large Number of Diſeaſes. Beſides, their Abſtinence from Wine, which is forbid them by *Mahomet*, their great Prophet, and the Founder of their Faith, prepares, as it were, and diſpoſes their Bodies to Corruption; for certainly there is not a more powerful Alexipharmic, or a more effectual Reſiſter of Putrefaction, than Wine moderately uſed. Another concurring and additional Cauſe, is their daily Uſe of emollient Baths, which, as is ſufficiently obvious, relax the Fibres, moiſten the Body too much, and deſtroy the native Energy and Virtue of the Blood. When, therefore, Bodies diſpoſed to Corruption, and prepared for the Reception of the Contagion, are expoſed to the Effluvia productive of this Diſorder, we may eaſily conceive how it muſt be propagated by this Means. The ſame Reaſons are to be aſſigned, why the Plague rages almoſt continually at *Smyrna* and *Aleppo*. *Hieronymus Mercurialis*, in the twenty-fourth Chapter of his fifth Book, informs us, from *Nicephorus Calliſtus*, That the Inhabitants of *Conſtantinople*, are continually racked with arthritic Diſorders; to which, as we are informed in the ſame Paſſage, the *Athenians* are alſo highly ſubject. But it is pretty ſurprizing, that the Venereal Diſeaſe is not ſo much as known in *Conſtantinople*, though the Inhabitants are above meaſure addicted to Venery:

Venery: This is to be accounted for from a Cuſtom of the Women, the principal Propagators, of this Infection, who, after the Embraces of a Man carefully waſh the Parts, and wipe away the Sordes, which might give Birth to this Diſeaſe. The Proſtitutes among the Antients uſed the ſame Practice; as we may juſtly infer from the fiftieth Epigram of the ſecond Book of *Martial*.

We now come to *Aſia*, beginning with the numerous and ſcattered Kingdoms of the *Indies*, where there is an inconceivable Variety of *endemial* Diſorders; among which that called *Berberi* is very remarkable and troubleſome: This is a Species of Palſey, or Trembling; depraving Senſation and Motion, and inducing a Tremor, not only on the Hands and Feet, but ſometimes alſo on the whole Body. The Cauſe of this Diſorder is lodged in the Nerves, which are ſtuffed with a tough and viſcid Humour, produced, according to ſome Authors, by the uncommon Inequalities of the Air, which in the Day-time is intenſely ſcorching, and during the Night exceſſively cold; for at this Time the Vapours, raiſed by the Heat of the Day, fall from the firſt Region of the Atmoſphere, and prove highly injurious to ſuch as lie in the open Air, without any Coverings, becauſe the Cold, by entering deeply into the Pores, previouſly opened and enlarged by the Heat of the Day, obſtructs the Emuſſories, and inſpiſſates the Serum; by which Means the Strength, Elaſticity, and Tone of the Fibres and Muſcles are deſtroyed.

The Inhabitants of theſe Kingdoms are, alſo, frequently ſubject to a Diſeaſe, by them called *Mordchi*, which is no more than a diſordered Stomach. The perpetual Heat, the copious Sweats excited by it, and the ſupervening Cold, very much weaken the Stomach: Now if the Inhabi-

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tants ſhould either eat or drink too liberally, eſpecially at Night, the Concoction of their Aliments muſt of courſe be unduly carried on; for which Reaſon Diarrhæas are not only very frequent, but alſo with great Difficulty cured among them.

They are alſo ſubject to ſpaſmodic Cholics, becauſe they indulge themſelves in Gluttony, and the immoderate Uſe of Brandy; but ſuch of them as drink Water are exempted from this Misfortune.

A ſingular and ſurpriſing Kind of ſpaſmodic Contraction is alſo highly incident to the Inhabitants of theſe Kingdoms, by which the Patient is of a ſudden rendered ſtiff and inflexible as a Statue, whilſt the Muſcles are involuntarily drawn either to the anterior or poſterior Part of the Body. The Inhabitants of theſe Countries are, alſo, frequently ſeized with a Diſorder, called the *Spaſmus Cynicus*, which diſcovers itſelf by a harſh and uncouth Noiſe, made by the Striking of the Teeth againſt each other. *Bontius*, in his Treatiſe *de Medicina Indorum*, has treated of this Diſeaſe at great Length: This Diſorder ariſes from a Redundance of bilious and ſulphureous Blood, becauſe it is cured by Veneſection, and Preparations of Nitre.

In theſe Regions a Diarrhæa, which generally proves mortal, is *endemial*. This Diſorder is to be aſcribed to the *Indian* Fruit, which, if not cautiouſly eaten with Rice or Bread, for the moſt part produce it; juſt as, in *France* and *Spain*, the Eating large Quantities of Grapes produces a Dyſentery. *Bontius*, as the principal Cauſe of this Diſorder, aſſigns their immoderate Uſe of a hot Liquor they call *Arrac*, and which the *Chineſe* prepare of Rice mixed with the *Holothuria* (a Sort of Zoophite floating in the Sea:) This *Holothuria* is of ſo hot and acrid a Nature, that it exulcerates and raiſes Bliſters

ſters on the Skin, when applied to it. It is alſo to be obſerved, that contagious, malignant Fevers are very rarely, and the Plague never, obſerved in the *Indies:* But the Small-pox is there *Endemial* and contagious. Simple and double Tertians are here very frequent, during which Diſorders the Patient is never allowed the Uſe of Fleſh-broths, or Eggs. Their fine and temperate Air prevents the Plague, and other Diſeaſes ariſing from Putrefaction; but intermittent Fevers are produced among them by an Obſtruction of Perſpiration, by means of the nocturnal Cold, eſpecially after any Error with reſpect to Regimen.

In the Iſland of *Ceylon*, and eſpecially in the Kingdom *Jafnapatnam*, in the Winter-time, Fevers, and Swellings of the Abdomen, ariſing from ſaline, crude, and calcareous Waters are very frequent. Beſides, their Winter itſelf is very dangerous, becauſe it obſtructs Perſpiration.

Among the Inhabitants of *Malabar*, the Small-pox rages with uncommon Fury; and *Boldæus*, in his Deſcription of the Iſlands of *Ceylon* and *Malabar*, accounts for the Violence and Malignity of this Diſorder from their wet Seaſons, and their Uſe of autumnal Fruits.

Among the Inhabitants of *China* and *Japan*, Diſorders of the Eyes, ſuch as Lippitude, Cataracts, and Blindneſs, are very frequent; and ariſe from the large Quantities of hot boiled Rice, which they daily uſe inſtead of Bread; for by this Means are generated a viſcid Lymph, and a thick Blood, which, circulating with Difficulty in the capillary Veſſels, at laſt ſtagnates and produces the above mentioned Diſorders. Thus we know from Experience, that Horſes, too conſtantly fed with Oats and Barley, very eaſily become blind, eſpecially after ſevere Labour, or much Running.

Among the *Chineſe* the Gout and arthritic Diſorders are very rarely found, perhaps becauſe they continually uſe warm Liquors, which keep the Emunctories open, promote Perſpiration, and eliminate from the Body, the impure, tartareous, and ſcorbutic Salts, which produce theſe Diſordes.

In the Iſland of *Formoſa*, the Air of which is hot and moiſt, the Plague is *Endemial*, and highly dangerous. During the Time it rages, the Inhabitants betake themſelves to high and inacceſſible Mountains, where the Air is thought to be purer than in the Valleys; drink the pureſt Waters they can find; eat nothing but Plants and Fruits; and do not return, to their Habitations, till the noxious Quality of the Air is corrected, and the Plague removed: *Geograp. Pſalmanaazaar, Deſcrit. de L'Iſle de Formoſa en Aſie, Cap.* 27.

From what has been ſaid it is ſufficiently obvious, that a hot and vapid Atmoſphere, not duly fanned and purged by Winds, excites a peſtilential Corruption; which, on the other hand, is moſt effectually reſiſted and prevented, by a ſerene and pure Air. It is ſurpriſing that, according to the ſame Author, Gouts and intermittent Fevers are abſolutely unknown in this Iſland, which perhaps is owing to the uncommon Temperance of the Inhabitants, and their Averſion to Gluttony and Luxury, from which theſe Diſorders ariſe.

In this Iſland alſo the Small-pox are ſo *Endemial* and univerſal, that ſcarce any one eſcapes them. For the moſt part they ſeize Children about the third Year of their Age, but in ſo ſlight and gentle a Manner as rarely to prove fatal. Among the Inhabitants of this Iſland the Small-pox are ſome times ſucceeded by a Redneſs diffuſed over the whole Body, and by the Inhabitants called *Schiptio*. This Diſorder is far more dangerous than the Small-

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pox themſelves, ſince 'tis attended with a violent Heat, and is ſo uneaſy to the Patients, that, unleſs duly cured, their Lives are often expoſed to the moſt imminent Danger.

The Women of this Iſland have more difficult and dangerous Labours than the *Europeans*, becauſe they never uſe any Exerciſe, but, like the antient *Greek* Women, keep themſelves conſtantly ſhut up in the moſt retired Parts of their Houſes. The venereal Diſeaſe is here abſolutely unknown, becauſe, among the Inhabitants Polygamy is allowed and Adultery ſeverely puniſhed.

At *Goa*, the principally Colony of the *Portugueſe* in the *Indies*, the Inhabitants are much ſubject to a Diſorder, called *Mordexyn*, which ſeizes the Patient ſuddenly, and unexpectedly, is attended with a Nauſea, and continually Vomiting, and often proves fatal.

Here the *Lues Venerea*, is *endemial*, univerſal, and not branded with that Infamy which other Nations throw upon it. Many of the Inhabitants are alſo afflicted with the Stone and Hernias, eſpecially the Men, becauſe they conſtantly drink Water, are highly laſcivious, and pamper themſelves.

Many of the Inhabitants of this Colony have their Abdomens ſo monſtrouſly large and promenent, that they are on that account ridiculed and ſcoffed at by ſuch of their Neighbours as are free from this Deformity, which ariſes from the intemperate Uſe of Sugar and Sweet-meats, and from their generally ſitting naked in the Porches of their Houſes after Dinner. This Subject is handled at greater Length by *Linſchont*.

The Inhabitants of *Armenia* are violently afflicted with Pains of the Eyes, which ſeem to ariſe from their being confined, through the whole Winter, which in their Country laſts eight Months, to the

Smoke of their Houſes, which have no Conveyances for carrying it off. This Smoke is principally hurtful to their Eyes, in which it produces Inflammations, Catarrhs, and other Diſorders according to *Carolus de Piacenz*, Miſſionary to *Congo*. It is alſo to be obſerved, that there are few or no Phyſicians in *Armenia*, and, if at any Time Men of that Profeſſion arrive among them, they have uncommon Honour and Veneration paid them. The *Armenians* are alſo much afflicted with the Gout, becauſe they drink more Wine than Water.

Among the *Perſians* the Gout and Stone are hardly known, becauſe the Natives are, by the *Mahometan* Laws, enjoined to abſtain from Wine; but that the Stone is generated by the immoderate Uſe of Wine is ſufficiently obvious, from the State of thoſe who live in Countries where Wine abounds, ſuch as the Inhabitants of the Brinks of the *Rhine*, the *Franconians*, *Auſtrians*, and ſome others. In the Iſlands of *Laar* and *Gamro* a Diſorder, known by the Name of *Dracunculi*, is frequently found; but of this we ſhall afterwards treat.

In *Tartary* the Inhabitants remain blind for ſome Days after their Birth, but this Blindneſs is only produced by a preternatural Extenſion and Relaxation of the Muſcles of the ſuperior Eye-lid; ſo that this Cauſe being removed, the Blindneſs is cured.

We now proceed to *Africa*, where we ſhall firſt treat of *Ægypt*, the *Endemial* Diſeaſes of which are the Itch, Inflammations of the Eyes, and Blindneſs. The Inhabitants of *Alexandria* are in Autumn afflicted with various malignant Fevers, and in the Winter with Inflammations of the Eyes, which alſo ſome times continue throughout the whole

whole Year. An highly contagious Species of Small-Pox, Hydroceles, Pneumatoceles, and hypocondriac Melancholy, are alſo very frequent at *Alexandria*. *Dapportus*, the beſt Writer concerning *Africa*, juſtly aſcribes theſe Diſorders to the ſqualid intemperate Air, impregnated with the Exhalations of the River *Nile*, to the ſtagnant and impure Waters of their Ciſterns, their drinking the turbid Waters of the *Nile*, and their eating ſweet crude Fruits, and their Uſe of Baths. To theſe Cauſes may be added, their exceſſive and long continued Heat; which, being ſucceeded by the Cold of the Night, weakens the Stomachs of the Inhabitants, and, by deſtroying the ſpirituous Quality of the Blood, diſpoſes it to Corruption. It is to be obſerved, that in *Ægypt* the Plague is rarely produced by the peccant Quality of the Air, but rather by the Inundations of the *Nile*, for, as this River for a long time covers the Ground, the whole Country becomes marſhy, and reſembles, as it were, a ſtagnant Sea; which, by the Blowing of ſoutherly Winds, and the intenſe Heat of the Sun, becomes putrid, and excites the Plague: Beſides, the Air, which is naturally hot, becoming moiſt by the Overflowing of the *Nile*, contributes not a little to the Production of this Calamity.

According to *Proſper Alpinus*, *de Medicina Ægyptiorum*, *lib.* 1. *cap.* 4. the *Elephantiaſis* is familiar and *endemial* to the *Ægyptians*; as alſo to the *Arabians*, and Inhabitants of *Java*; this Diſorder is produced by their uncommon Food, eſpecially Aſſes-fleſh, and their drinking the turbid Waters of the *Nile*. Of this Opinion was *Galen*, in his firſt Book, *de Aliment. Facultat.* *Avicenna* was of the ſame Sentiment; as alſo *Lucretius*, as appears from the following Lines of his ſixth Book:

Eſt Elephas Morbus, Qui propter Flumina Nili
Gignitur Ægypto in Medio neque præterea unquam.

In *Æthiopia* the Women are bleſſed with peculiarly eaſy and happy Labours, and are generally delivered on their Knees, as we are informed by *Ludolphus*, in his *Hiſt. Æthiop.* *Barlæus* (in his Book *de Rebus in Braſilia Geſtis*,) mentions the like Hardineſs and Strength in the *Braſilian* Women; who, as he informs us, "do not keep themſelves "up for five or ſix Weeks after Labour, like the "*European* Women, but ſet about their ordinary "Buſineſs next Day after their Delivery, though "their Bodies, however firm and healthy, are yet "very ſmall." I have often heard and read that in *Batavia* the Women immediately after their Delivery go into running Water, and waſh both themſelves and their Children, without any Danger to either.

The Inhabitants of ſome Parts of *Guinea* are highly ſubject to have Worms bred in moſt Parts of their Bodies; but this Diſorder is more ſevere upon the Natives than the Inhabitants of other Nations, and ſometimes rages ſo violently as to ſeize Mariners when only ſailing by the Places, to which it is peculiar. It begins with an Itching of the Skin, partly in the Arms and Feet. and partly in the more fat and muſcular Parts of the Body. Soon after appears a Puſtule ſometimes of the Bulk of a Pea, and at other times as large as three. This Puſtule is not broken by the Worm itſelf, which muſt be cut out by ſome ſkilful Operator. When the Puſtule is laid open there appear two Hairs, which, as they are white, and placed on the Head of the Worm, are called its Beard. The

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Puſtule itſelf is filled with Water, and the Worm is to be extracted from it in the Morning or Evening. If it is lodged in a fat Place of the Body, and ſome Part of it appears without the Puſtule, it may often be all extracted at one time. Theſe Worms are often an Ell long, as white as Snow, cold to the Touch, though juſt extracted from warm Fleſh, and ſomewhat thicker than a pretty large Thread. If they are lodged in the Legs and Feet, they are ſo interwoven with the Veins and Muſcles, that they cannot all be extracted at once, but muſt be taken away by Pieces; by which means large Swellings and Collections of Matter are formed under the Skin. In order to remove theſe Fontanels muſt be made, or a Diſcharge procured to the Pus in ſome other Manner, by which means many Patients contract not only Diſorders of the Feet, but alſo a total Lameneſs. *Demmerſan. Itin. Indic. Plutarch*, in the ninth Chapter of his *Sympoſiacs*, makes mention of this Diſorder in the following Words: "Accordingto *Agathorclides*, thoſe who live near "the *Red Sea*, are affected with very ſurprizing "and uncommon Symptoms; ſince, in ſome Parts "of their Bodies, a Species of ſmall Worms, "called *Dracontia*, are formed." Theſe eat through their Legs and Arms, and look about them, but when touched retire, and hide themſelves; when they are wrapped up and intangled in the Muſcles, they excite intolerable Phlegmons. Concerning theſe the Reader may ſee more in *Welſchius*'s *Diſſertat. de Vena Medinenſi*, in *Ludolf*'s *Hiſt. Æthiop.* and in *Hieronymus Mercurialis*, *lib.* 4. *cap.* 40.

Though to aſſign the true and genuine Cauſe of theſe Dracontia, or Dracunculi, is no eaſy Taſk, we ſhall never the leſs attempt it as briefly as we can. This Diſorder, then, in all Probability,

ariſes from the Corruption of the Waters; for, as we are informed by *Piſo*, under the Æquator, and in exceſſively hot Places, the Waters, eſpecially of the ſtagnant Kind, abound with Worms of all Sorts, which are cheriſhed and kept alive by the Heat of the Sun. Hence it is not to be doubted, but, when thoſe Waters are either greedily drank, or even when, after exceſſive Heat, the Pores being opened, the Feet are waſhed in them, the Seed of theſe Animals ſlips into the Interſtices between the Muſcles and the Skin, where, remaining without any Annoyance, it is cheriſhed and nouriſhed by the moiſt and temperate Heat of the Body. In *Europe*, ſuch Worms are frequently found under the Skins in Calves, Deer, and other Animals between the Muſcles and the Skin, which latter they corrode ſo far as to render it totally pervious; but this Diſorder is principally incident to young Animals, which they extenuate and evacuate in a very ſurprizing Manner.

La Hontan (in his *Nouveau Voyage dans l'Amerique Septentrionale*, *Tom.* 2.) informs us, that the *Americans* are of Conſtitutions ſo ſound and robuſt, that they are rarely expoſed to the Shocks of any Diſorder; among them Palſeys, the Stone, and Dropſies are not ſo much as known. Such an uncommon State of Health is the rather to be wondered at, becauſe they ſeem to be at little Pains to preſerve it; ſince they not only uſe ſevere Exerciſes, Dancing, and Hunting, but alſo expoſe themſelves to all the Hardſhips of War and Fatigue. The Pleuriſy ſometimes rages among them, but they are acquainted with the moſt proper Method of curing it. The Small-pox are very frequent in *Canada*, and the more Northerly Parts; but the Ve-

Venereal Diſeaſe is the Diſeaſe which principally rages in the Southerly Parts. The former of theſe Diſorders is highly dangerous in the Winter-time, becauſe Perſpiration is then obſtructed by the Cold, and the latter is highly familiar and *endemial* among the *Illineſe*, and thoſe who inhabit the Banks of the *Miſiſſippi*. In *Canada* large Numbers of People are, alſo, deſtroyed by the immoderate Uſe of Brandy, by which the native Heat is impaired, and a Conſumption brought on. They are no great Admirers of Medicines, and abſolutely laugh at Vomiting and Veneſection. Every Week, however, they generally Sweat, during which, in the Summer-time, they go into the Rivers, and in the Winter-time immerſe themſelves in Snow.

In the Iſlands of *Cuba*, *Jamaica*, and *Hiſpaniola*, the Bites of Serpents and Scorpions are highly injurious to the Inhabitants, on which occaſion they take the following Methods: They apply a Ligature to the Part affected, and ſometimes ſcarify it; afterwards covering it with Theriaca, which they alſo take internally. They alſo uſe internally a Scruple of the Powder prepared of the Hearts and Livers of Serpents, by which means they not only preſerve themſelves from the Bites of theſe Animals, but alſo eaſily cure themſelves when ſubjected to that Misfortune. The *Lues Venerea* is *endemial* in *Peru*, where it firſt began to rage after the Diſcovery of that Part of the World, and being brought into *Europe* in 1494 was firſt ſeen in the Siege of *Naples*. The Cauſe of this Misfortune is aſcribed to their Uſe of human Fleſh, Lizards, and Fiſhes eaten raw. See *Tebri Hiſtoir. des Antilles*, *Tom.* 2. *tract.* 5. *cap.* 2.

Theſe are the Obſervations which have occurred to me with reſpect to the Diſeaſes *Endemial* and peculiar to certain Countries and Nations; and, I hope, the Reader will from them be convinced, that by means of Aliments, acting mechanically, we either become ſick, recover, or die.

OF

Bernardino Ramazzini

OF THE DISEASES OF TRADESMEN.

CHAP. I.

Of the Diſeaſes of METAL-DIGGERS.

THE various and numerous Diſeaſes, produced in Artificers by the Exerciſe of their reſpective Trades, are, in my Opinion, derived principally from two Cauſes: Firſt, the noxious Quality of the Matter on which they work, and which, by breathing out noxious Steams, and ſubtile Particles offenſive to human Nature, gives riſe to particular Diſeaſes; and in the next Place certain violent and diſorderly Motions, and improper Poſtures of the Body, by which the natural Structure of the vital Machine is ſo undermined as gradually to make way for violent Diſtempers.

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Having fixt upon this Diviſion, my firſt Taſk ſhall be to conſider ſuch Diſeaſes as ariſe from the offenſive Quality of the Matter which Tradeſmen handle in the Way of their Buſineſs. Under this Head I reckon the Diſeaſes which affect Mine-diggers, and all Workmen who work upon Minerals; ſuch as Goldſmiths, Alchymiſts, Diſtillers of *Aqua-fortis*, Potters, Looking-glaſs-makers, Founders, Pewterers, Painters, and others.

The peſtilential Steams hid within the metallic Veins, make the firſt Impreſſion upon the Mine-diggers, who ſpend their Days in the ſubterraneous Caverns of the Earth; ſo that *Ovid* had Reaſon to ſay,

——— *Itum eſt in viſcera terræ,*
Quaſq; recondiderat, Stygiiſq; admoverat umbris,
Effodiuntur Opes, irritamenta malorum.

It is true, the Poet's View run upon the evil Qualities which affect the Mind, and he meant to laſh the Avarice or Madneſs of Men, who take ſuch Pains in bringing to light what may be called good; becauſe, as *Pliny*, elegantly expreſſes it, *We have made it the Price of all good Things*; but in Effect is the Source of ſo many Evils: Though this, I ſay, is the Poet's direct Meaning, yet his Words may be properly applied to the Diſorders which affect the Body. Now, the Diſeaſes which Metal-diggers and other ſuch Artificers are liable to, are for the moſt part a Difficulty of Breathing, Phthiſic, Apoplexy, Palſy, Cachexy, Swellings of the Feet, Falling of the Teeth, Ulcers in the Gums, Pains and Tremblings in the Joints; ſo that upon the Whole their Lungs and Brain are affected; but eſpecially the Lungs which ſuck in the mineral Spirits along with the Air, and ſo receive the

the first Injury; after which the same Spirits, admitted within the Course of the Circulation and mingled with the Blood, corrupt and taint the natural Temperament of the Brain and the nervous Juice, from whence spring the Tremblings, Stupidity, and other Disorders above-mentioned. Hence it is that those who dig Minerals in the Mines are but short-lived; and the Women who marry them have the Opportunity of matching with several Husbands; for *Agricola* asserts that, near the Mines of the *Carpathian* Mountain, Women have been known to marry seven Husbands. And *Lucretius* says of the same Persons,

Nonne vides, audisve perire in tempore parvo
Quam soleant, & quam vitati copia desit.

In those Places where there are Mines, to dig in them was anciently, and is still, reckoned a Sort of Punishment fit to be inflicted upon Criminals; and accordingly we learn from *Gallonius*, *de Martyrum Cruciatibus*, that in ancient Times the Christians were usually (*Damnati ad Metalla*) condemned to dig in the Mines. And there is still extant a noble Epistle of *Cyprian* to several Bishops and Deans, whom the Emperors had barbarously condemned to dig in the Mines; in which he exhorts them to approve themselves the true Votaries of Christ, in those very Mines from whence they digged Gold and Silver. *Pignorius* also, in his Book *de Servis*, has the Draught of a Mine-digger taken from an ancient Sculpture, which shews how miserable their Condition was; for their Heads, which were covered with long Caps, were half-shaved; and by this Sign, in antient Times, the Slaves were distinguished from the Fugitives, whose Heads were shaved all over. And even in our Time

Time I reckon the Mine-diggers are not in a much better State; for, ſuppoſe they fed clean, and had good Things about them, yet ſuch is the Influence of the dark and impure Place they draw their Breath in, that their Looks reſemble thoſe of the Inhabitants of the Shades below, even when they peep out into our purer Air. In fine, let the Mineral they dig be what it will, they are ſtill liable to violent Diſeaſes, which often elude all manner of Cure even when proper Things are preſcribed: And indeed it ſeems to be a doubtful Caſe, whether we ought to reckon it a good and pious Office, to preſcribe Phyſic to ſuch Wretches, and thereby prolong a miſerable Life.

But as great Profit ariſes to Princes and Merchants from Mines, and as the Uſe of Metals is highly neceſſary to almoſt all Arts, we are therefore bound in Duty to preſerve the Lives of theſe Workmen by inveſtigating their Diſeaſes, and propoſing Cautions and Remedies for the Removal of them.

This was the Practice of former Ages, and even in theſe our Times, thoſe who have written of Metals have treated at ſome Length of the Diſeaſes of the Diggers, and of the Regimen and Remedies to prevent or cure them; particularly, *Georgius*, *Agricola* *, *Bernardus*, *Cæſius*, *Mutinenſis*, in his *Mineralogia* †, where he has many curious and important Remarks of the *Damnati ad Metalla*, and of the preſervative Courſe and Diet of Metal-diggers. *Athanaſius Kircherus*, in his *Mundus ſubterraneus* ‡, *P. Lana*, in his *Magiſterium Artis & Naturæ* ‖; and *D. Ramlovius*, who has wrote a Treatiſe

* Lib. 6. *De Re Metallica*, lib. 10. † Sect. 5.
‡ Tom. 2. lib. 10. ſect. 2. cap. 2.
‖ Tom 3. *de Morb. Symp.*

Treatiſe in *High-dutch* of the Palſy and Tremblings of Metal-diggers. Wherefore we ought to diſpenſe, out of the Store-houſe of Medicine, ſome Relief or Comfort for the wretched Condition of that Sort of Workmen; and, conſidering that the ſeveral Kinds of Minerals are almoſt innumerable, and that each of them produces peculiar Evils, there will be a Neceſſity of tracing the Manner and Way in which the Bodies of Diggers are infected, and giving the readieſt and moſt approved Remedies.

Some Mines therefore are moiſt, with Water ſtanding at the Bottom; others are dry; and in both theſe we are ſometimes obliged to uſe Fire to ſplit the Rock or Stones. Now, in the moiſt Mines, where the Water ſtagnates, the Legs of the Workmen are apt to be vitiated, and by the Stench of the groſs and poiſonous Steams which exhale from thence, eſpecially when the Pieces, or Splinters of the Stones, or Rocks fall into the Water, and ſtir up the poiſonous Source, the Workmen's Breath is taken away, inſomuch that they fall down head-long, or half dead. And the Fire itſelf, which otherwiſe tames Poiſon, being uſed here to ſoften the Rocks, ſtirs up and raiſes the peſtilential Steams out of the mineral Matter; and thus do all the Elements conſpire to torture the poor Workmen.

But no Exhalation is ſo abſolutely pernicious to them, as that which breaks forth from the Quick-ſilver Mines; for *Fallopius*, in his Treatiſe *de Metallis & Foſſilibus*, aſſures us, that in the Quick-ſilver Mines ſcarce any of the Workmen reach the third Year: And *Etmuller*, in his *Mineralogia*, *cap. de Mercurio*, affirms, that in the Space of four Months they are ſeized with Tremblings in the Joints, Palſies, and Vertigo's; and that, by rea-

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ſon of the mercurial Spirits proving highly injurious to the Nerves.

In the *Tranſactions* of the *Royal Society* of *England* * we have a Letter, ſent from *Venice* to that Society, importing, that in ſome Quick-ſilver Mines in the *Forum Julii*, none of the Workmen are able to hold out above ſix Hours at a time. In the ſame Letter we have an Account of one who, having worked in theſe Mints for half a Year, was ſo impregnated with Mercury, that if he put a Piece of Braſs into his Mouth, or handled it with his Fingers, it became thereupon white.

L. Tozzius, in the ſecond Part of his Practice *C. de Aſthmate*, takes notice, that theſe Workmen are apt to be ſeized with Aſthmas: They uſed likewiſe to be troubled with the falling out of their Teeth; and for that Reaſon the Refiners of Quick-ſilver are wont to avoid the receiving of the Smoke in their Mouth by turning their Backs to the Wind.

Helmontius, in his Treatiſe *de Aſthmate & Tuſſi*, deſcribes a certain Kind of Aſthma, between the dry and the moiſt Species, which, he ſays, is common among the Diggers and Refiners of Metal, the Minters of Money, and ſuch other Workmen, by reaſon of a metallic *Gas* ſucked in along with the Air, and which ſtuffs up the Veſſels of the Lungs.

Wedelius, in his *Pathologia Medica Dogmatica*, † makes mention of an *Aſthma Montanum*, to which thoſe who work upon Metals are liable; and acquaints us, That *Stockuſius* writ a whole Treatiſe of that Sort of Aſthma, in which he imputes all the Miſchief to the Quick-ſilver of Lead; for Lead

* Tom. 1. *April* 1665. † Sect. 9. 2. cap.

Lead contains a great deal of Mercury, to which it owes its Gravity. The ſame Author * explains the Manner in which theſe metallic Fumes give Riſe to this diſmal Sort of Aſthma; by the Exſiccation of the *Bronchia*, and the conſtipating Virtue of the Smoke and Soot.

Sennertus, in his Book of the *Conſent and Diſſent* † of the *Chymiſts* with the *Galeniſts*, tells us, upon the Authority of a Phyſician, who practiſed near the Mines of *Myſnia* in *Germany*, That, in the diſſected Corps of the Workmen, they found the very Metal they had been employed to dig. And *Statius* ‡, inviting *Maximus Junius*, who then lived by the Mountains of *Dalmatia*, has a handſome Turn to this Purpoſe, in deſcribing the Return of this ſubterraneous Crew from their Mines, viz. *Dite viſo, erutoque concolor auro*; importing, That, after viſiting the Mines, they returned died with the Colour of the Gold they have been a digging.

Since the Colour of the Skin reſembles that of the Humours, *niſi intro refluxerint*, *unleſs they retire to the internal Parts*, as *Galen* teaches us, *in Aph.* 1. *Com.* 2. and as we find it verified in almoſt all Diſeaſes, it is no wonder that the Skin of theſe Workmen bears the ſame Colour with that of the Metal, with which the Maſs of their Blood is tainted. Perhaps the ſame Thing happens in the Lungs of the Workmen, that we ſee come to paſs in the Furnaces for the refining of Metal, in which *Pompholyx*, *Cadmia*, and other metallic Concretions are generated out of the Fumes which fly up.

In

* Sect. 3. cap. 5. † Sect. 3. cap. 5. ‡ Cap. 9. ‖ Lib. 4. *Sylv.*

In the Vitriol Mines the Workmen are, alſo, frequently ſeized with violent Difficulty of Breathing. *Galen*, *de Simplic. Medic. Facult.* deſcribes a Cave in *Cyprus*, out of which the Workmen fetched Water for the making of this Subſtance; and acquaints us further, that he went down almoſt a Furlong into the Cave, and there ſaw Drops of green Water falling into the Lake. He adds, that he ſmelt a ſuffocating and hardly tolerable Smell; that he ſaw the Workmen entirely naked fetching out the Water with great Diſpatch, and running ſpeedily back again. Now nothing is more pernicious to the Lungs than an acid of any ſort, with which Vitriol is plentifully ſtocked. Many of our indolent Phyſicians now-a-days would laugh to ſee any other Profeſſor and Searcher after natural Things, making dangerous Journeys to ſubterraneous Places, in queſt of the ſecret Receſſes of Nature. I remember with what Deriſion I was pointed at myſelf, when I run the Riſque of my Life in tracing the Source of the Springs of *Modena*, and when I ventured to go down into our Pits which yields the *Petrolæum* in the Mountains: But theſe People may learn of *Galen*, who undertook long Travels, and with a curious Eye ſought after the hidden Secrets of Nature, with Intent to ſet the Virtues of Medicines in a clearer Light. But, to avoid Digreſſions,

Not only the internal Parts of the Body, but likewiſe the external are greatly injured, particularly the Hands, Legs, Eyes and Throat. *Agricola* informs us, that the Hands and Legs are galled and corroded to the very Bone in the Mines of *Myſnia*, where the black *Pompholyx* is found. He adds, that the Nails of the little Huts and Cottages in the Neighbourhood of theſe Mines are made of Wood,

Wood, upon the Obſervation that this *Pampholyx* has conſumed Iron.

Mines are alſo greatly infeſted with living Plagues, which torture the poor Workmen to the laſt Extremity, I mean certain little Animals reſembling Spiders, which *Agricola*, out of *Solinus*, calls *Lucifuga:* Theſe Animals haunt chiefly the Silver-mines; and when the Diggers, through Inadvertency, ſit down upon them, they are miſerably ſtung and indiſpoſed. *Agricola* informs us likewiſe, that *Dæmons* and Ghoſts terrify and diſturb the Workmen, and that this ſort of Apparitions cannot be prevented without Prayer and Faſting. See *Kircherus*, in his *Mundus Subterraneus* *. I took this Story of Devils haunting Mines to be fabulous, till I was undeceived by a ſkilful *Hanoverian* Operator in Metal, who is now employed by our Duke in tracing the metallic Veins in the mountainous Parts of *Modena*. For this Man told me ſeriouſly, that in the *Hanoverian* Mines, which are famous enough in *Germany*, the Diggers have frequent Falls, which they ſay are occaſioned by their being knocked down by Devils, which they call *Knauff-kriegen*; and that after ſuch Falls they often die in the Space of three or four Days, but if they out-live that Time they recover. Theſe *ſubterranean* Devils are likewiſe mentioned in the *Tranſactions* † of the *Royal Society* of *England* ‡. The ſame *Hanoverian* informed me further, that in the *Goſlar* Mines, where the Vitriol-oar is digged

* Lib. 6. *de Re Metallic. & de Subt.*

† Tom. 2. *Nov.* 1666.

‡ This idle Story of Devils is not to be credited however well atteſted. Nothing is more common than for Men of the beſt Senſe and greateſt Learning, to relate the greateſt Abſurdities, out of a Paſſion for the Marvellous.

digged up in the Form of a Powder, the Workmen do all their Buſineſs naked: For if they kept their Cloaths on under Ground but for one Day, as ſoon as they came up every Thing about them would turn to Powder: And for the ſame Reaſon thoſe who in *Galen*'s Time carried out the *Calcanthum* Water, in the Mines of *Cyprus*, were all naked.

Though the Nature and Temper of Metals and Minerals are ſufficiently laid open by the Induſtry of the Chymiſts; yet there are ſo many inexplicable Mixtures and Combinations of Minerals in the Bowels of the Earth, that it is almoſt impoſſible to determine what ſpecific Hurt or Injury is peculiar to this or that Mine, and how they affect one Part more than another. So that we can only ſay in general, that this impriſoned Air, taken in at the Mouth for the Uſe of Reſpiration, is impregnated with Particles very injurious to the Lungs, Brain, and Spirits, which, joining with the Maſs of Blood and Spirits, produce all the Evils the Workmen complain of.

It is therefore the Duty of the Overſeers of Mines, and of ſuch Phyſicians as have that Province allotted them, to make all the Contrivances they can for the Safety of the Workmen, and, ſince they cannot remove the occaſional Cauſe, to take ſuch Meaſures, that the Workmen may be as eaſy as poſſible. When theſe Men are ſick, we muſt do by them as we do with thoſe who are ill of deſperate Diſeaſes, to whom we do not deny the Preſcription of Medicines, at leaſt ſuch as have a mitigating, pacific Virtue: For, as *Hippocrates* ſays, * we muſt purſue the Knowledge of incurable Diſeaſes, with an Intention to make them as eaſy as we can.

The

* *De Art.* Nx. 68.

The impriſoned Air of the Mines being tainted and polluted, partly by the Steams of the mineral Matter and of the Workmen's Bodies, and partly by the Fumes of the Lights that are kept under Ground, the Overſeers of Mines uſe to draw out the groſs and ſtagnating Air, and let in ſuch as as is more pure and freſh, by ſome Wind-machines communicating with the Bottom of the Mines through Paſſages under Ground. They alſo generally guard the Hands and Legs of the Workmen with Gloves and Boots, to prevent their being infected. It is manifeſt, that the Ancients likewiſe took great Care of the Safety and Health of their Mine-diggers; for *Julius Pollux* aſſerts †, that they uſed to cover them with Bags or Sacks. They uſed to have looſe Bladders upon their Mouths, to keep out the pernicious Air; and theſe Bladders were ſo contrived, that they could ſee through them, as *Pliny* ‖ tells us of the Poliſhers of *Minium*. But at preſent, eſpecially in the Arſenic-mines, we uſe Glaſs-vizards, which is a ſafer and a neater Contrivance, as *Kircherus* informs us, in the Place laſt quoted.

The ſame Author preſcribes various Remedies, both as preventive and curative; which, he ſays, he had from an expert Man in Metals. He beſtows great Encomiums on a Liquor diſtilled from Oil of Tartar, *Laudanum*, and the Oil of Colcothar, given to three Grains. By Way of Prevention or Preſervation, he commends fat Broth and generous Wine. For thoſe who are already infected, he recommends a Balſam made of Nettles, and the ſeaſoning of their Food with the Salt of Nitre, and a Salt extracted out of Alum.

Jun-

† Lib. 7. cap. 32. ‖ Lib. 33. *H. N.* cap 5.

Junken, in his *Experimental Chymiſtry*, recommends the dulcified Spirit of Salt, for ſubduing metallic Vapours.

For the Corroſion and Soreneſs of the Throat and Gums, Gargariſms of Milk are extreamly ſerviceable, as being apt to qualify and abſorb the corroſive Particles lodged in thoſe Parts. With this View *Agricola*, in the Place laſt quoted, ſays, Butter is very conducive to thoſe who work in Lead-mines: For thoſe whoſe Feet and Hands are chopped and galled, as it happens in the Mines where the black *Pompholyx* is digged, *Pliny* * recommends the Powder of the Stone called *Aſius*, or *Eat-fleſh*. This Preſcription he grounds upon an Obſervation, that thoſe, whoſe Legs were ſpoiled in Metal-mines, were cured by working in the Quarries where that Stone is found. It is poſſible this Stone might correct the metallic Acrimony by its particular corroſive Virtue, with relation to which it is called *Sarcophagus*, *Cæſalpinus*, *de Metallicis* †, alledges, that the true Stone, called *Aſius*, from being found in *Aſſos* of *Troy*, is unknown to us, and puts in the room of it another Stone that is found in *Ilva*, where the Rock-alum is digged.

Etmuller ‖, when he treats of an injured Inſpiration, propoſes ſome peculiar Remedies for the aſthmatic Diſorders which ariſe from metallic Fumes; alledging, that the ordinary antiaſthmatic Remedies afford no Relief in ſuch Caſes. For this End he recommends Mercurius Dulcis, Turbith, Cathartics, diaphoretic Antimony, the Solar Bezoardic, and the like.

Since the Eyes are likewiſe ſignally injured by theſe mineral Streams, the mineral Kingdom muſt like-

* Lib. 36. *H. N.* cap. 17. † Cap. 51.
‖ Lib. 14.

likewiſe be conſulted for a Remedy to that Misfortune. By the Uſe of internal Minerals *Horſtius* cured an *Ophthalmia* ariſing from metallic Fumes, and eluding all external Remedies. But at the ſame Time *Collyriums* *, made of the Scales or Offal of Braſs, are much commended; and even the Ancients were appriſed of their Virtue; for it is aſſerted by *Macrobius* †, that thoſe who work in Braſs-mines have always ſtrong and ſound Eyes, by reaſon of the drying Virtue, as he calls it, that is inherent in the Braſs. With the ſame View does *Homer* ‡ give to Braſs the Title of Νώροπα χαλκὸν; and *Celſus* allows a Preference before all others to *Cleon*'s *Collyrium* of the Scales of Braſs, with Saffron, and Spodium, or Putty. To theſe *Collyriums* you may add Nitre; for *Pliny* ‖ affirms, that, in Salt-petre Mines, the Workmen are not weak-eyed, and the Obſervation of later Authors confirms his Teſtimony. Upon the whole, we may lay down this for a ſtanding Truth, that the moſt proper and effectual Remedies, for defeating metallic Diſeaſes, are generally to be obtained from the mineral Kingdom; and indeed the Conduct of Nature in this Point is very provident, in furniſhing a Cure from the ſame Quarter which produces the Diſeaſe.

But the metallic Steams affect not only the Workmen who dig in the Mines, but likewiſe many other Artificers who work about the Mines; particularly all thoſe who are employed in working, melting, and refining the Metal; who are all ſubject to the ſame Diſeaſes with the Diggers; only they are not ſo deeply affected, becauſe their Work is done in the open Air. In Proceſs of Time, the metallic Fumes render them ſhort-breathed, lethargic,

* Lib. 17. *Oſ* 27. † Lib. 7. cap. *ult*.
‡ Lib. 6. cap. 7. ‖ Lib. 32. *H. N.* cap.

gic, and ſubject to the Diſorders of the Spleen; and at laſt they grow conſumptive. *Hippocrates* * gives us a ſhort but accurate Deſcription of the Caſe of one who works in Metal. *A Man of this Buſineſs*, ſays he, *has his right Hypochondrium tenſe, a large Spleen, and a coſtive Belly; he breathes with Difficulty, is of a pale, wan Complexion, and is apt to have Swellings in his left Knee.* Such is the Train of Evils which *Hippocrates* allots to this Sort of Men. And here we cannot but wonder how *Valeſius*, who otherwiſe comments very accurately upon *Hippocrates* his *Epidemics*, comes to paſs ſo tranſiently over this Place; for neither he nor any of the Commentators have made any Remark upon the Words, *Vir metallicus*. *Galen* † indeed takes notice of the Place, but then he employs all his Thoughts upon the Word *Pneumatodes*, by way of Diſquiſition, whether *Hippocrates* meant by it the Inflammation of the Abdomen, or a Difficulty of Breathing. After all it is apparent, that the divine Preceptor meant to point out the Cauſe of ſo many diſmal Diſorders in one Word: For thoſe who work upon Metals are generally ſhort-breathed, ſplenetic, coſtive, and wan-complexioned. *Fœſius* renders the Words ἐκ μεταλλου, *Qui circa fodinas verſabatur, who frequented Mines.* So that not only the Diggers, but thoſe who live and work near the Mines, are diſordered by the metallic Exhalations, which cloud the vital and animal Spirits, whoſe Nature is ethereal and pellucid, and thus pervert the natural Oeconomy of the whole Body. To theſe therefore we are to preſcribe the ſame Remedies as we mentioned above, only their Doſe muſt be gentler.

CHAP.

* *Epid. n.* 13. † 3. *De Diff. Reſp.* cap. 12.

CHAP. II.

Of the Diſeaſes of GILDERS, *or thoſe who work in* Gilt.

IF we turn our View from the Mines, and the Beating, Melting, and Refining Work-houſes, to Towns and Cities, here we alſo meet with Workmen who ſuffer by the Influence of Minerals. It is well known what diſmal Calamities are inflicted by Quick-ſilver upon Goldſmiths, and chiefly thoſe who are imployed in gilding Silver or Braſs-work: For, as this gilding cannot be performed without Amalgamation, ſo when they afterwards come to diſlodge this Mercury by Fire, though they turn away their Faces, they cannot poſſibly avoid receiving ſome poiſonous Steams at the Mouth, and accordingly we find that this ſort of Workmen quickly become aſthmatic, paralytic and liable to Vertigo's; and their Aſpect becomes cadaverous and ghoſtly. Few ſuch Workmen continue in that Way to old Age; or, if they do not die ſoon, their Condition becomes ſo miſerable, that Death is preferable to Life. Their Neck and Hands tremble, their Teeth fall out, their Legs are weak and affliſted with the Scurvy, according to *Junchen* in his *Experimental Chemiſtry**. *Fernelius* atteſts the ſame Thing in his Treatiſe *de Abditis Rerum Cauſis*†, and in his Book, *de Lue Venerea*, where he gives a miſerable Inſtance of a Gold-finer, who, in Gilding ſome Silver-plate, was ſo affected by the Mercurial Vapour, that he thereupon became

* Sect. 5. *de Merc.* † Lib. 2. cap. 7.

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came ſtupid, deaf, and dumb. *Foreſtus* gives much ſuch another Story of a Goldſmith, who turned paralytic upon expoſing himſelf imprudently to the Mercurial Steams. *Olaus Borrichius* has a pretty Obſervation extant in the *Acta Medica Haffnienſia*‡) of a *German* who lived by Gilding Plate; and, upon managing the Steams of the Mercury with leſs Caution than uſually, fell into a diſmal Vertigo, with a violent Difficulty of Breathing, a ghaſtly Countenance, a Lowneſs of Pulſe, and Trembling of the Joints, inſomuch that every one thought he was expiring; but was cured after all by Sweat procured with ſeveral alexipharmacal Preſcriptions, and eſpecially the Decoction of the Roots of Burnet and Saxifrage. That Famous Author is of Opinion, that the minuteſt Corpuſcles of the Mercurial Fumes, being forced in upon the Nerves, occaſioned the Trembling, and at the ſame Time being admitted into the Maſs of Blood clogged its natural Motion. It would be too tedious to inſert all the Hiſtories of this kind we meet with in Phyſical Authors. Such Caſes are but too frequent in great Cities, and particularly in this our Age, in which nothing is thought handſome or neat, unleſs it ſhine with Gold; inſomuch that the very Chamber-pots and Stool-pans are gilded; and the Ceremony of throwing out is more chargeable than that of taking in, as *Martial* ſaid of one in former Times.

I had Occaſion myſelf not long ago to ſee a young Man, a Gilder, who died after two Months Confinement to his Bed, having taken too little Care to avoid the Mercurial Exhalations. For they threw him at firſt into a cachectic Habit of Body; after that his Face became wan and of a cadaverous Complexion, his Eyes ſwelled, his Breathing

‡ Vol. 2. p. 196.

ing became difficult, and his Mind ſtupid, and an inactive lazy Drowſineſs ſeized his whole Body. He had fœtid, ſtinking Ulcers in his Mouth, which voided inceſſantly a very great Quantity of naſty Matter. And after all, this Man died without any feveriſh Symptom; at which indeed I was not a little amazed: For I could not be ſatisfied how ſo great a Putrefaction of the Humours ſhould happen without any febrile Heat. But, upon conſulting Authors, my Amazement was removed. For *Ballonius* ‖ has an Inſtance of one, ſuſpected to be under a Venereal Contagion, who was ſeized with a Quartan, and cured of the Fever by the Inunction of Mercury, which raiſed a Salivation. *Fernelius* in like manner (*de Lue Venerea**) mentions the Caſe of one whoſe Brains melted and run out of his Eyes for ſeveral Years without a Fever; and who died at laſt, but had formerly ſuffered a mercurial Inunction. And the ſame Author ingenuouſly acknowledges, that he could not but wonder how it came about, that this Man was never feveriſh: But in his ſecond Book, *de Abditis Rerum Cauſis*†, he ſeems to offer ſome Reaſon why Mercury quells a febrile Heat; alledging, that it does it by a narcotic Virtue, and that it corrects the Ardour and corroſive Quality of the Bile, by the ſame Faculty that it enables it to appeaſe all manner of Pain, and ſtop Eruptions of Blood. Shall we therefore conclude, that Mercury is poſſeſſed of an antifebrile Virtue? Perhaps Time may honour the Science of Phyſic with a *Febrifuge* from the mineral Kingdom, and that not covered with Riddles and Obſcurity, as *Riverius* gives it, but openly and candidly diſplayed. Why may not this come

‖ Lib. 2. Ep. p. m. 131. * Cap. 7. † Cap. 14.

to paſs, as well as the Diſcovery made upon the vegetable Kingdom, which affords us the famous *Peruvian Febrifuge*, and an antidyſenteric Remedy lately diſcovered, of which the famous *Leibnitz* has publiſhed a Treatiſe? But in this Affair we ought to conſult Experience; and indeed I cannot ſee any Inconveniency in giving mercurial Purgatives in intermitting Fevers; particularly thoſe of *Mercurius Dulcis*, which is no ſuch formidable Remedy. It is true, Mercury ought to be cautiouſly prepared, and with equal Caution adminiſtered; for, when it falls into unſkilful Hands, it is like an unmanageable Horſe, as the learned *Borrichius* obſerves, in relating the Caſe of an illuſtrious Perſon, who in a high burning Fever had two little Bags full of Quick-ſilver applied to his Wriſt by a Quack, which extinguiſhed at once both the febrile and the native vital Heat. After all, the Benefits we receive, from ſuch a faithleſs and *Proteius* like Medicine, are ſo much ſuſpected, that we may juſtly apply to the medicinal Mercury, what the Prince of Poets ſaid of the poetical.

——— *Animas ille evocat orco,*
Pallenteſque alias ad triſtia Tartara mittit,
Dat ſomnos, adimitque, & lumina morte reſignat.

But, to return to the Subject in Hand, which is the Redreſſing of the Injuries proceeding from mercurial Vapours, conveyed along with the Air we breathe: For this End we ought to conſult ſuch Authors as have wrote of Poiſons and Minerals. In general all ſuch Things are commended as are qualified to put in Motion the Spirits and Maſs of Blood, and procure Sweat. For Mercury for the moſt part cauſes a drowſy Inactivity, as appears from the above-mentioned Accidents, occaſioned by the Re-

Reception of metallic Fumes at the Mouth, and from ocular Inſpection; for in ſuch Caſes we find concreted Blood in the Sinus's of the Heart; as *Avicenna* tells of a Monkey which had drank Quick-ſilver. By this Rule, all cordial ſpirituous Waters, and even Brandy or Spirit of Wine, will be of uſe; as well as the Spirit of Sal Armoniac, Spirit of Turpentine, Oil of Petre, or our Rock-oil, the volatile Salts of Hartſhorn, Vipers, and ſome others; but *Venice* Treacle is juſtly ſuſpected, by reaſon of the Opium. The Decoctions of *alexipharmic* Plants; ſuch as *Carduus Benedictus*, *Scordium*, *Scorzonera*, and the like are more effectual than their diſtilled Waters, which *Helmont* happily calls *Plantarum Sudores*. *Fallopius* preſcribes Gold-duſt and Gold-leaf, there being nothing which Mercury joins with ſo readily and cloſely as with Gold. *Martin Lyſter*, in his *Exercitem de Lue Venerea*, adviſes to oppoſe the venomous Exhalations of Mercury with the Decoction of *Guaiacum*, by reaſon of the *Vis piperata*, *aromatic Force*, which, he ſays, the *Guaiacum* injoys, and is diſtinguiſhable by the Taſte.

Againſt mercurial Diſeaſes, particularly of thoſe who have been anointed with mercurial Ointments, or by any chance have ſucked in the Smoak of Mercury, *Poterius*‡, in his *Pharmacopœa Spagyrica*, recommends ſublimated Sulphur infuſed in Wine. Where the Redundance of Humours renders Purgation neceſſary, we muſt give ſtronger Purgatives than in other Caſes, by reaſon of the Dullneſs occaſioned by the Mercury, and becauſe the ſenſitive Faculty is leſs apt to be moved by the *Stimuli* of the Medicine. Antimonials will anſwer this and all the other Ends admirably well. Bleeding muſt be avoided by all means, for the Spirits and the

‡ Sect. 3.

Maſs of Humours want to be ſtimulated, and not quelled. *Pliny* tells us, that in digging Lead and Quick-ſilver the Antients uſed to tie looſe unbent Bladders upon their Faces, as I intimated above. *Kircherus*, in his *Mundus Subterraneus*, ſays, Glaſs Vizors are of better Uſe to guard the Mouth from Exhalations. Exerciſe muſt be purſued in regard it heats the Body, and keeping in a warm Chamber by a good Fire is commended; for Mercury avoids the Action of Fire as much as poſſible.

But after all, it is ſtrange that Mercury, which is the only Remedy for Worms, and is given to Children without any manner of Hurt, either by way of Infuſion or Decoction, or in Bolus's, or with any Conſerve, ſhould emit ſuch pernicious Exhalations, as ſuffocate Perſons almoſt in a Minute, when they are received by the Mouth and Noſtrils. The Reaſon I take to be this: The Texture and Fabric of the Quick-ſilver being diſſolved by the Violence of the Fire, it is reduced to ſuch minute Particles, as penetrate to the Lungs, Heart and Brain, upon their being received at the Mouth and Noſtrils. By this Means it is enabled to cloud the animal Spirits with more Facility, and taint the whole Maſs of Fluids with a narcotic Languor: Whereas its Infuſion or Decoction given at the Mouth to ſeveral Ounces, and even to a Pound, as in the Iliac Paſſion, occaſions none of the above-mentioned Accidents; for it does not meet with ſo much Heat in the Bodies of Animals, as is ſufficient to diſſolve and convert it into Fumes; nay, it is ſo far from that, that it keeps its Fabric unaltered, and by its Weight makes way for itſelf, breaking through all Barriers; inſomuch that we find in *Auſonius* it acted the Part of an Antidote to a jealous Huſband, whoſe adulterous Wife had given him Poiſon, and afterwards Quick-ſilver in

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hopes thereby to accelerate his Death. Thus it is, that Fire, otherwiſe the Corrector and Tamer of Poiſon, raiſes Things otherwiſe innocent into a venomous Nature, or exalts and ſharpens the Poiſon. *Ambroſius Paræus* * acquaints us, that Pope *Clement* VII. died by receiving into his Body the Smoak of poiſoned Torch that was carried before him, and adds, that it is a falſe and pernicious Thought, that Fire by its ſearching Virtue purges and cures all Things. Hence I think we have ſufficent Reaſon to doubt, whether in Time of a Plague it would not be better to bury the Cloaths and other Appurtenances of thoſe who die of the Contagion along with their Corps, than to commit them to the Flames in purſuance of the uſual Cuſtom. Among the *Romans* the burning of the Corps within the City or near another Man's Houſe, was prohibited by the Law of the Twelve Tables; and the principal Reaſon of the Prohibition was, the Fear of having the Air defiled by the Smoak and Exhalation. The Fire produces various and different Effects, according to the Diverſity and Mixture of the Bodies upon which it acts; ſo that ſometimes it ſets free and diſengages, and at other Times it concentrates and condenſes Poiſon. Of this we have a manifeſt Inſtance in Quick-ſilver, which, though drunk without any great Inconveniency, yet, when ſublimed with the Salts, aſſumes, a corroſive Nature, which afterwards grows milder, by the Addition of Mercury under the Influence of the Fire, and ſo becomes a *Mercurius Dulcis*, which when right prepared, is none of the meaneſt Remedies, for purging Phlegm and extirpating the veneral Contagion.

* Lib. 20. *de Venen.* 7.

CHAP. III.

Of the Diſeaſes of SURGEONS, *and others imployed in* Friction *and* Inunction *for Venereal Caſes.*

BESIDES the Perſons abovementioned, Mercury is likewiſe injurious to the *Surgeons* of the Age we now live in; I mean thoſe of them who anoint pocky Perſons, or ſuch as cannot be cured without Salivation. As ſoon as the Virulence of the Pox flew from the Siege of *Naples* all over *Italy*, and run from thence like Lightning to all the Parts of *Europe*, the chief and principal Remedy they found out, for controuling the fierce Contagion, was Mercury; and to this very Day the ſame Remedy is ſtill in Repute, being further recommended by the continued Experience of two Centuries. The antient Phyſicians had obſerved, that nothing was more effectual than Mercury againſt the moſt malignant Scab, or Itch; ſo that, by way of Analogy, it was concluded, that, ſince pocky Perſons had Blotches and Ulcers in their Skin, Mercury muſt likewiſe be of uſe to them, and Experience juſtified the Inference. The firſt Author of the mercurial Inunction was *James Berengarius*, commonly called *Carpus* from his Country, the moſt noted Surgeon and Anatomiſt of thoſe Times, as is obvious by his Works; from which, as being very rare and hard to come at, the modern Anatomiſts have culled a great many important Things without mentioning his Name. *Fallopius*, in his Treatiſe of the Pox, tells us, that *Jacobius Carpenſis* got above 50,000 Ducats of Gold only by curing the Pox with Inunction; and that he killed

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many, though he cured the greateſt Part. It is certain this Anointer knew better than the Alchemiſts how to make a true *Metamorphoſis* of Mercury into Gold; a Happineſs ſure that is very uncommon, and far different from what appears in the Times we live in, which ſtruck even *Sennertus* himſelf with Admiration.

Now-a-days thoſe, who rub the mercurial Ointments on pocky Perſons, are the meaner Sort of Surgeons, who undertake that Office to make a little Money by it; for the better Sort of Surgeons decline ſuch a ſordid Piece of Service, which is likewiſe accompanied with Danger. It is true, in ſuch Caſes they make uſe of a Glove, but all that Precaution is not ſufficient to keep the mercurial Atoms from penetrating the Leather, and ſo reaching the Surgeon's Hand; for, upon other Occaſions, we uſe to cleanſe and ſtrain Quick-ſilver through Leather; neither can all their Caution guard againſt the Exhalations, which the great Fire, by which the Inunction is performed, muſt neceſſarily excite: And it is well known, that theſe Exhalations, entering the Body by the Mouth and Noſtrils, prove very injurious to the Brain and Nerves. *Fabricius Hildanius* † relates the Caſe of a Woman, who ſitting in the Room by her Huſband, while he was anointed with a mercurial Ointment, had ſuch a Salivation raiſed merely by the mercurial Air taken in at the Mouth, that Ulcers were formed in her Mouth and Throat. *Fernelius, de Lue Venerea* ‡ writes, that the Hands of ſuch pocky Perſons as have been often anointed with Quick-ſilver, tremble and ſhake. *Frambeſarius* acquaints us, that a Surgeon, upon anointing a pocky Perſon with the uſual Ointment, was ſeized with a continual Vertigo and Dimneſs of Sight.

† Cent. 5. Obſ. 93. ‡ Cap. 7.

For my Part I can think of no cautionary Method ſo proper and ſo effectual, for thoſe imployed in ſuch Inunctions, as that of a Surgeon of our Country, who finding to his Coſt that the Danger and Trouble he underwent ſurpaſſed the Profit, and having experienced by frequent Looſeneſſes, Gripes, and Salivations, upon his own Perſon, that ſuch Inunctions were more afflicting to him than to the Perſons anointed, did thereupon alter his Courſe, and continuing to prepare the mercurial Ointment as before, and to ſtand by the Patients while the Friction was performed, ordered the Patients to rub themſelves with their own Hands; by which means a double Advantage is gained; for not only the Surgeon avoids Danger, but the Patients thus heating themſelves, by the Motion and Exerciſe of their Arms, make the Ointment penetrate the better; and withal have no Reaſon to apprehend any Danger to themſelves from the Remedy, in which they place all their Hopes of Relief. But if ſuch Surgeons have contracted any Harm by the Inunction, ſuch as the Shaking of the Hands, a Giddineſs in the Head, and Gripings of the Guts, in ſuch Caſes, as I ſaid before, the Decoction of *Guaiacum* is the Remedy. For as Mercury is the great Conqueror and Corrector of the venereal Poiſon; ſo *Guaiacum*, by its melting and ſudorific Virtue, corrects the Diſorders occaſioned by the Mercury, in afflicting the Body with a narcotic Dullneſs, and an Imbecillity of the Nerves. Accordingly we find that theſe two cardinal Remedies do, with joint Forces, thoroughly accompliſh the Cure of the Pox; and that in ſuch a Manner, that *Guaiacum* does firſt attack and weaken the Diſeaſe with ſmall Skirmiſhes, after which Mercury ſtands the Brunt of a longer Engagement, and at laſt *Guaiacum* comes in and

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diſperſes the ſtraggling Remains of the routed Enemy.

CHAP. IV.

Of the Diſeaſes of CHEMISTS.

THOUGH the *Chemiſts* boaſt of the Art of Subduing and Fixing all Minerals, yet they themſelves cannot eſcape free from their pernicious Influence; for they are oftentimes afflicted with the ſame Diſorders with the other Workmen imployed about Minerals; and though, to keep up the Credit of their Art, they may deny it in Words; their very Faces evince the Puniſhment they undergo. *Leonardus è Capua* informs us, that *Theophraſtus* and *Helmont*, two celebrated Chemiſts, were ſeverely puniſhed by the Preparation of their own Medicines. *Junchen*, in his *Experimental Chemiſtry* ‖, tells us, that in making the Glaſs of Antimony, the Smoak of the pulverized Antimony, renders the Operator ſhort-breathed, and affects him with a Swimming in the Head. *Etmullerus*, *de Tuſſi*, candidly acknowledes that when he was in perfect Health, and had Occaſion to prepare the Clyſſus of Antimony, by chance the Retort broke, and, the Smoak of the Sulpher and the Antimony reaching his Mouth and Noſtrils, he was ſeized with a Cough, which afflicted him for four Weeks after, of which he knew no other Cauſe, but that acid Smoak which ſtimulated the Organs of Reſpiration, and made them rough. What *Tachenius* openly confeſſes of himſelf, in his *Hipocrates Chemicus* *, is pretty enough;

‖ Sect. 5. * Cap. 23.

enough; he tells us, that, having a mind to ſublime Arſenic, till it ſhould remain fixed at the bottom of the Veſſel, by opening the Veſſel after ſeveral Sublimations he perceived a wonderfully ſweet Smell, but in half an Hour after was ſeized with a Pain in his Stomach, with a Difficulty of Breathing, a Piſſing of Blood, a Cholic, and Convulſions all over his Body. He adds, that, by the uſe of Oil and Milk, he recovered himſelf pretty well, but was afflicted for a whole Winter with a ſlow Fever, not unlike a Hectic, which at laſt he got removed by uſing the Decoction of the vulnerary Herbs, and eating Colewort Tops. I was acquainted myſelf with our *Carolus Lancelotus*, a Chemiſt of ſome Note, but a trembling, blear-eyed, toothleſs, ſhort-breathed, rotten Fellow, whoſe very Looks derogated from the Fame and Repute of the coſmetic Medicines which he uſed to ſell.

But, after all, far be it from me to brand the Study of Chemiſtry for an unlawful Exerciſe; doubtleſs, all Praiſe and Commendation is due to thoſe Chemiſts, who are ſo intent upon the Diſcovery of abſtruſe Things, and enriching the Science of natural Things, that they ſcruple not to ſacrifice their Lives to the public Good: Neither are they to be blamed, if, in correcting the Virulence of Minerals, they cannot uſe ſufficient Caution; for there is a Neceſſity of their ſtanding by, and obſerving the whole Proceſs even under the Heat of the Fire and the Smoak of the Coals, if they would have the Medicines duly prepared and exhibited with Safety: For *Renatus Carteſius* ſays, in chemical Operations, the leaſt Variation and Neglect may ſo alter the Qualities of the Medicines, as to turn them into Poiſon, inſtead of Remedies. To

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the ſame Purpoſe ſays *Junchen* * in his Preface, chemical Medicines cannot be exhibited by a Phyſician with a ſafe Conſcience, unleſs he either prepares them with his own Hand, or ſees them prepared by an expert Chemiſt. So that, as a Groom is not to be blamed if, in breaking a fierce and vitious Horſe, he is ſometimes thrown; ſo a Chemiſt muſt not be laughed at though he comes out of his Laboratory with a ſquallid and frightful Aſpect, like one juſt arrived from the Regions below.

A few Years ago a mighty Quarrel aroſe between a Citizen of *Final di Modena*, and a *Modeneſe* Merchant that had a great Laboratory in that Town. The *Final* Man ſued the Merchant, alledging, that he ought to place his Laboratory out of Town, or ſomewhere elſe, becauſe it annoyed the whole Neighbourhood, while they calcined the Vitriol for the making of *Sublimate*. To make good his Charge, he produced the Atteſtation of a Phyſician of that Town, and the Pariſh Books; by which it appeared, that a greater Number of Inhabitants in Proportion had died in that and the other Places adjacent to it, than in thoſe which were more remote. The Phyſician atteſted further, that thoſe who lived in the Neighbourhood of that Place died uſually of a Conſumption, and of the Diſeaſes of the Breaſt, which he imputed principally to the Exhalations of the Vitriol which polluted the ambient Air, ſo as to render it unfriendly to the Lungs. *Bernardinus Corradus*, Commiſſary of the Ordinance in the Territory of *Eſte*, employed his Pen in behalf of the Merchant; and *Caſina Stabe*, a Phyſician at *Final*, appeared in Vindication of the other.

In

* Epiſt. 17.

In fine, ſeveral Papers were writ *pro* and *con* prettily enough, and theſe warm Diſputes were raiſed upon the Shadow of the Smoak. At laſt the Judges favoured the Merchant, and Vitriol was abſolved as innocent. Whether the Lawyer did Juſtice or not, I leave the natural Philoſophers to judge.

To return to the Subject-matter of this Chapter, I ſhould be ſenſible of offering an Affront to the Chemiſts, if I propoſed any Remedy, whether preſervative or corrective for the Injuries ſuſtained in the Way of their Profeſſion; upon the Conſideration, that there is ſcarce any Diſeaſe, for which the Chemical Storehouſe has not a ready and effectual Remedy. So, leaving them to their own Laboratories, we ſhall now proceed to other Work-houſes.

CHAP. V.

Of the Diſeaſes of POTTERS.

THERE is ſcarcely any City in which there are not other Workmen, beſides thoſe mentioned above, who receive great Prejudice from the metalic Steams. Among ſuch we reckon the *Potters*; For what City, what Town is without ſuch as practiſe this moſt antient Art? Now the Potters make uſe of burnt and calcined Lead for glazing their Ware; and for that End grind their Lead in Marble-veſſels, by turning about a long Piece of Wood hung from the Roof, with a ſquare Stone faſtened to it at the other End; while they do this, as well as when, with a Pair of Tongs, they daub their Veſſels over with melted Lead, before they put them into the Furnace, they receive,

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by the Mouth and Noſtrils, and all the Pores of the Body, all the virulent Parts of the Lead thus melted in Water and diſſolved, and are by that Means ſeized with heavy Diſorders. For firſt of all their Hands begin to ſhake and tremble, ſoon after they become paralytic, lethargic, ſplenetic, cachectic, and toothleſs; and, in fine, we ſcarcely ſee a Potter that has not a Leaden cadaverous Complexion. In the *Acta Haffnienſia* †, an Account is given of a Potter in whoſe diſſected Corpſe the right Lobe of the Lungs was found adhering to the Ribs, and tending to a withered Dryneſs and a Phthiſic; this Indiſpoſition of his Lungs was attributed to the Trade he had worked at; for the Patient had been bred to the Potters Trade, and finding it unhealthful had left it off, though not ſoon enough. *P. Poterius* ‡ tells us of a Potter, who became paralytic in the Right-ſide, with ſuch a Diſtortion of the *Vertebræ*, that his Neck became ſtiff. This Man, he ſays‖, he cured with the Decoction of Saſſafras-wood and Bay-berries. The ſame Author * relates likewiſe the Hiſtory of another Potter who died ſuddenly.

Such are the Diſeaſes which affect thoſe imployed in Potters Work-houſes, to manage and work the Lead; and indeed, it is a wonderful Thing, that Lead, which affords ſo large a Stock of wholeſome Remedies, both for internal and external Uſes, ſhould harbour in its Boſom ſuch pernicious Principles; and while it is pounded, or diſſolved in Water, ſhould by its ſole Exhalations give Riſe to ſuch diſmal Diſorders in the Potters, who are obliged to make uſe of it. But I ceaſed to wonder, when I learned from the excellent Mr. *Boyle*, that in a Moment of Time almoſt Quick-ſilver

† Vol. 9. ‡ Obſer. 28. ‖ Cant. 2.
* Cap. 36.

ſilver is fixed and rendered ſolid by the Vapour or Steam of melted Lead; ſo that, as *Tiuſſhonas* has juſtly obſerved, in his *Exercitation of the Uſe of Reſpiration*, the ſame Thing that the Poets fancied *Vulcan* to do with *Mars*, is done by Lead to *Mercury* by fixing it. It is no Wonder therefore that Lead, though of a cold Nature, when thus ground ſurpriſingly affects the Grinders, by clogging their Blood and Spirits, and rendering their Limbs unſerviceable.

That Lead is poſſeſſed of an acid, auſtere, very ſharp, and penerating Spirit, is atteſted by all Chemiſts, and the Refiners of Gold and Silver can witneſs the ſame at their own Coſt, there being Lead mixed with thoſe Metals. The Authors of the *Collectanea Chemica Leydenſia* ſay *, the Spirit of Lead is endowed with ſuch an *Acrimony*, that, when it goes through the Copel, if one receives the exhaling Steams at the Mouth or Noſtrils, he may be immediately ſuffocated; and thoſe who are not ſufficiently cautious in avoiding it, are generally puniſhed with the Loſs of all their Teeth.

Being obliged, in Proſecution of my Deſign laid down in this Book, to viſit all the Work-houſes of Artificers, in order to obtain a clear View of the occaſional Cauſes of their Diſeaſes, I had once a ſtrong Mind to inſert here ſome Remarks I made in the Potters Work-houſes, concerning the mechanic Art of glazing Earthen Ware, which is very antient, as appears from the Rubbiſh of Antiquity digged out of the Earth, and highly neceſſary: For, if we had not the Way of glazing earthen Veſſels, what a great Charge would the World be put to in Pewter and Copper Veſſels both for the Kitchen and the Table. I could not forbear joining Admiration to my Curioſity, when the

* Cap. 16.

the Enquiry, how it came to pass that the earthen Ware, first boiled in the Furnace, then covered with Lead calcined, pounded with the Powder of Flints, and melted, and thus put into the Furnace again, did assume by the Influence of the Fire, that glassy Crust that renders them so serviceable in all the Uses of Life, and particularly to the Chemists, who inculcate nothing more, than that glazed Vessels should be made use of in *Spagyric* Operations? But I cannot do Justice to this Subject, without digressing too much from my Purpose. Besides, I am afraid, lest, in Treating of the Potters Business, I should have *Horace*'s Censure thrown upon me.

——————*Amphora cœpit*
Institui; *currente rota cur urceus exit.*

Upon these Considerations I chose to drop the Design which I may possibly pursue upon a more proper Occasion, in a Piece which I intend to publish, entitled, *De Artium Mechanica Rationali.*

As for the Cure of such Workmen as fall under the above-mentioned Disorders, it is a hard Matter to light upon such Remedies as will restore them to perfect Health: For they seldom have recourse to the Physicians, till the Use of their Limbs is taken from them, and their *Viscera* grown hard; besides, they are commonly pinched with another Evil, *viz.* extream Poverty; so that we were forced to fly to the *Medicina Pauperum*, and prescribe such Things as at least will mitigate the Illness, advising them withal to give over working at their Trade. I have given with Success for several Days mercurial Purgatives, particularly *Mercurius Dulcis* with the lenitive Electuary, at the same Time I or-

ordered the Hands and Feet to be anointed with our Rock-oil. The chalybeat Remedies, which are not very chargeable, if exhibited for a long Time, will do conſiderable Service in correcting the Hardneſs of the Viſcera. I prefer the ſimple Filings of Steel infuſed in Wine with Cinnamon, to all the chemical Chalybeats, as being at once more effectual and leſs chargeable to poor People.

In the mean Time we muſt take notice, that there are ſeveral different Sorts of Workmen in a Potter's Work-houſe; ſome of whom are imployed in working of Chalk with their Hands and Feet; and others in forming the Veſſels by ſitting and turning a Wheel; ſo that all, who go by the Name of Potters, are not ſubject to the Diſeaſes before-mentioned, and therefore care muſt be taken, that, whenever the Name of a Potter is heard, we do not preſently adminiſter the Remedies, calculated to correct the Injuries of the mineral Matter. However, this may be ſaid of them in general, that as they all ſpend their Lives in moiſt Places, and are ſtill imployed in Handling moiſt Earth, ſo they are for the moſt part wan-complexioned and cachectic, and almoſt always complaining of ſome Illneſs or other. Thoſe who ſit at the Wheel, and form the Veſſels by turning it about with their Feet, are apt to have a Swimming in the Head, if their Eyes are otherwiſe weak; and often the over-tiring of their Feet makes them ſubject to the Sciatica; and therefore we ought to aſſiſt them with the Remedies preſcribed by Practitioners in ſuch Caſes; which, if they not do not extirpate, will at leaſt alleviate and mitigate the Diſeaſe.

CHAP.

CHAP. VI.

Of the Diſeaſes of thoſe who work in COPPER *and* TIN.

THE Workmen, whoſe Buſineſs it is to melt and hammer *Copper* or *Tin*, are expoſed to the ſame Misfortunes with the former; for the ſubtile Atoms which exhale from the Copper, while it is frequently heated for the eaſier Extenſion, enter the Lungs, raiſe a dry Cough, and by their Acrimony corrode the veſicular Texture of the Wind-pipe and the Lungs; they likewiſe produce Vertigo's and a diſcoloured Complexion. The Nature of theſe Particles, lodged in the Copper, is ſet in a clear Light by the Beard and Hair of the Workmen, which in theſe Work-houſes become green. As for thoſe who work in Tin, they are uſually attacked by the ſame Symptoms with the Melters and Grinders of Lead, of which ſort are the Potters: For Tin bears a great Reſemblance to Lead, upon which Account ſome call it *white Lead*, and others ſay, it is a *Medium between Silver and Lead.* It is certain, that it conſiſts of Mercury and a ſharp Sulphur; ſo that, when the Workmen melt it, they cannot but receive at the Mouth pernicious Exhalations from it.

Etmuller, in his *Collegium Conſultatorium* *, has a curious Hiſtory of a Tinman, who was ſeized at firſt with a Cough, and then with ſo great an Anxiety and Difficulty of Breathing, eſpecially at Night,

* Caſ. 17.

Night, that he uſed to jump out of Bed, and open the Windows to take in the freſh Air, and to walk up and down the Houſe all Night till Break-of-day, at which Time all the Symptoms diſappeared. The Cauſe of all theſe Symptoms is imputed, by the experienced Author, to the mercurial Steams of the Metals; for he tells us, that Tin contains a large Quantity of volatile Antimony, which, mixed with Nitre, aſſumes a fulminating Force. This ſort of Aſthma he ranks among the convulſive Kind, as depending upon the ſpaſmodic Contraction of the *Plexus Nerveus*, which hinders the Expanſion of the Lungs.

We frequently meet with ſuch Inſtances in Cities; and, whenever they have recourſe to the Aid of Phyſic, they ought to be treated with the ſame Caution with the other Workers in Metal. In the mean Time the Breaſt, being the principal Seat of the Diſeaſe, ought to be chiefly regarded, and firſt looked after; for their firſt Complaint is of a Difficulty of Breathing. They muſt be cured therefore after the ſame Method with thoſe who are ill of an *Aſthma Montanum*, taking care to avoid every Thing that dries; in the Room of which Butter, Milk, Emulſions of Almonds and Melonſeed, Barley Ptiſanes, and the like, will be of good Uſe.

CHAP.

CHAP. VII.

Of the Diſeaſes of GLASS-MAKERS *and* GLASS-GRINDERS.

IN the whole Train of Tradeſmen, I do not think there are any who manage their Buſineſs more wiſely than thoſe concerned in the Glaſs-works; for they work only ſix Months of the Year, that is, in Winter and Spring, and the reſt of the Year they enjoy themſelves; and, when they arrive at the fortieth Year of their Age, they ſeaſonably bid adieu to their Trade, and ſpend the reſt of their Time either in injoying the eaſy Fruits of their former Labours, or in following ſome other Work. The hard, laborous Work which theſe Men do, and which cannot be borne but by Men of a robuſt Conſtitution, and that in the Vigour of their Age, is abſolutely intolerable for a long tract of Time. Indeed I take the melted Maſs, which floats in their Furnaces, to be inoffenſive, at leaſt I know no ſenſible Harm it does to the Workmen; for they never complain of that, neither is there any noiſome Smell to be perceived in the Glaſs-houſes. The Courſe of this Work does not allow me Time to enquire particularly into the Nature of that Maſs of which the Glaſs is made, or into the mechanic Contrivance which form the Glaſſes, by the Intervention of Wind or Blowing. It is ſufficient to our preſent Purpoſe, if we know that all the Injury, redounding to the Workmen from this ſort of Work, is intirely owing to the Violence of the Fire, and ſometimes the Addition of ſome Minerals calculated for colouring the Glaſſes. The Workmen

Workmen are obliged to ſtand conſtantly half-naked, in the coldeſt Seaſon of the Year, juſt by Furnaces, heated to the laſt Degree, and there to blow the Glaſſes with their Eyes conſtantly fixed upon he Fire and the melted Glaſs; ſo that their Eyes ſuſtain the firſt Shock, and accordingly we find they often bewail their Misfortune in voiding a ſharp wateriſh Humour, and grow ſlender and little, their watery Nature and Subſtance being exhauſted and conſumed by the intenſe Heat. The ſame Heat racks them with a perpetual and an inſatiable Thirſt, ſo that they are forced to drink often. But they drink Wine more willingly than Water, for whoever drinks Water upon a great Heat, from what Cauſe ſoever, will find it much more hurtful than Wine, as appears from the many Inſtances of thoſe who have died ſuddenly by drinking cold Water upon great Heats.

They are likewiſe ſubject to the Diſeaſes of the Breaſt; for, having nothing on but their Shirt, their Breaſt is always expoſed to the Air, and, when their Work is over, they are obliged to go in their Shirts from the Work-houſe to colder Places: So that Nature, though ſtrong and robuſt, cannot long bear ſuch violent and ſudden Charges; but muſt needs ſink under Pleuriſies, Aſthma's and chronical Coughs.

But far greater Misfortunes attend thoſe who make the coloured Glaſſes for Bracelets and ordinary Women's Ornaments, and other Uſes, for they cannot colour the Chryſtal without uſing Borax calcined, and Antimony with ſome Gold; all which they reduce to an impalpable Powder, and mix it with the Glaſs, in order lo make a Paſte. Now while this is a doing, though they cover and turn away their Faces, they cannot a-

void receiving the noxious Exhalations at the Mouth; nay, it oftentimes falls out, that they fall down dead, or are ſuffocated, or, in Progreſs of Time, are afflicted with Ulcers in the Mouth, Gullet, and Wind-pipe, and at laſt die conſumptive with Ulcers in their Lungs, as is manifeſt from the Diſſection of their Bodies.

I have often wondered within myſelf how the Mixture of the Borax and the Antimony with the glaſſy Maſs ſhould produce ſuch pernicious Effects: But certainly it is Matter of Fact that it does; for though I am not an Eye-witneſs of it (there being no coloured Glaſs made in this City) I have a ſatisfactory Account of the Matter from the excellent *Joſeph de Grandis*, formerly my Auditor in the Univerſity of *Modena*, and at preſent a worthy Profeſſor of Phyſic and Anatomy at *Venice*, where there are noble Glaſs-houſes in the Iſland which goes by the Name of *Murano*. I hinted above, that the Mixtures of Things often impoſe upon the beſt Phyſicians, eſpecially if expoſed to the Operation of the Fire; for, though *Helmont* calls Fire the Corrupter and Death of all Things, it is the Author and Parent of many Things: And to this Purpoſe *Pliny**, very agreeably to the Principles of Chemiſtry, obſerves, that, out of the ſame Matter one Thing is produced by the firſt Fire, a different Thing by the ſecond, and a Thing different from both by the third.

Thoſe who make Looking-glaſſes, eſpecially at *Venice*, are expoſed as much as the Gilders to the noxious Quality of Mercury, in covering large Pieces of Chryſtal with Quick-ſilver, to make the Reflexion brighter on the other ſide. It is probable this Art was unknown to the Antients, there

* Lib. 37. *H. N.* Cap. 26.

there being no mention made of it by *Pliny**, who in his *Natural Hiſtory* deſcribes the ſeveral Ways of making Looking-glaſſes. Theſe Workmen therefore become ſubject to Palſies, Aſthmas, and the above-mentioned Diſorders. Accordingly, in the Iſland *Murano* at *Venice*, where the large Looking-glaſſes are made, we may ſee theſe Workmen beholding their own miſerable Hue in the Glaſſes they handle, and curſing the Trade they choſe to follow. By a Letter ſent from *Venice* to the Royal Society of *England*, and publiſhed in the Tranſactions of that Society†, it appears, that thoſe who are imployed at *Venice* in covering the Looking-glaſſes with Quick-ſilver, often die apoplectic.

As for the relief which Phyſic affords, I ſhall add nothing to what I have ſaid before; the ſame Cure being proper in this Caſe: which was recommended above for ſuch as uſe Minerals in their Way of Buſineſs, and work upon Metal.

CHAP. VII.

Of the Diſeaſes of PAINTERS.

PAINTERS are alſo uſually ſubject to various Diſorders, ſuch as the Tremblings of the Joints, a Cachexy, a Blackneſs of the Teeth, a diſcoloured Complexion, Melancholy, and a Loſs of Smelling; for it ſeldom happens that the Painters, who uſe to draw the Pictures of others handſomer and better complexioned than the Originals, are themſelves

* Lib. 33. Cap. 9. † Tom. 1. *April.*

ſelves either handſome or well-complexioned. For my Part, I have always obſerved, that all the Painters I know, either in this or other Towns, are almoſt always ſickly; and, if we conſult the Hiſtories of Painters, we ſhall find they were not long-lived; eſpecially if we confine our View to ſuch as made a diſtinguiſhing Figure. Hiſtory informs us, that *Raphael Urbin*, a very famous Painter, was ſnatched away in the very Flower of his Age; and *Balthaſar Caſtilioneus* condoled his untimely Death in a very pretty Poem. It is true, the Diſeaſes of this Sort of Men may be imputed to their ſedentary Life, and the Melancholy that feeds upon them, while they retire from human Society, and bend all their Thoughts upon the Execution of the Deſigns they have formed in their Fancies. But the principal Cauſe of their Sicklineſs is the Matter of the Colours, which is always among their Hands and under their Noſe; I mean the red Lead, Cinnabar, Cerus, Varniſh, Oil of Walnuts, and Oil of Linſeed, with which they temper their Colours, and ſeveral other Paints made of various Minerals. Hence it is that their Shops have ſuch a naſty ſtinking Smell, which is chiefly owing to the Varniſh and the aforeſaid Oils, and is very offenſive to the Head; and perhaps the Loſs of Smell, uſually among Painters, flows from no other Cauſe. Beſides, when the Painters are about their Work, they have naſty daubed Cloaths upon them, ſo that they cannot avoid taking in at the Mouth and Noſtrils the offenſive Exhalations; which, by invading the Seat of the animal Spirits, and accompanying the Spirits to the Blood, diſturb the Oeconomy of the natural Functions, and give riſe to the above-mentioned Diſorders. All the World knows, that Cinnabar is the Off-ſpring of Mercury, Ceruſe is

made of Lead, Verdigreaſe of Copper, and the Ultramarine Colour of Silver; for the metallic Colours are much more durable than thoſe of a vegetable Extraction, and for that Reaſon the Painters value them more: Therefore it is plain, that almoſt all the Ingredients of Colours are taken from the mineral Kingdom, upon which account they muſt do harm, and by Conſequence Painters muſt be liable to the ſame Diſtempers, though not in ſo violent a Degree, with the Workmen who work in Metal.

Fernelius * gives a pretty curious Account of an *Anjou* Painter, who was ſeized at firſt with a Shaking and Trembling in the Fingers and Hands, and afterwards with Convulſions in the ſame Parts, which likewiſe affected the whole Arm. Some time after the ſame Symptoms appeared in his Feet, and at laſt he was taken with ſuch a violent Pain in his Stomach and both the Hypochondria, that neither Glyſters, Fomentations, Baths, nor any Sort of Remedy gave him eaſe. The only Relief he had in the Violence of the Fits was to have three or four Men leaning with all their Weight upon his Belly, the Compreſſion of which leſſened the Torment. In this miſerable Condition he continued for three Years, and then died conſumptive. Our Author ſays, the noted Phyſicians were ſtrangely divided in their Opinions of the true and genuine Cauſe of ſuch a diſmal Diſorder, and that not only before, but after the opening the Body, for there was nothing preternatural to be ſeen about the Viſcera. In reading this Hiſtory, I could not but admire the open and candid Confeſſion of *Fernelius*, who, purſuant to the Cuſtom of truly great Men, as *Celſus* obſerves, makes this free Acknowledgment: *Omnes ſiquidem aberamus a ſcopo, & tota quod aiunt via erravimus,*

* *De Luc Verer.* c. 7.

banus, i. e. *All of us miſtook the Caſe, and were quite out of the Way.* He adds farther, that this Painter, having uſed not only to whipe his Pencil with his Fingers, but imprudently to ſuck it clean, it is likely that the Cinnabar, thrown upon the Fingers, was communicated to the Brain, and the whole nervous Syſtem, by the meer Continuity of the Parts; and that received at the Mouth, in ſucking the Pencil, tainted the Stomach and Inteſtines with an inexplicable malignant Quality, which proved the occult Cauſe of the immenſe Pain.

The ſame is the Cauſe of their diſcoloured Complexions, and cachectic Habit of Body, as well as of the melancholic Fits they are uſually ſubject to. It is ſaid of *Antonius de Allegris*, commonly called *Corrigienſis*, from *Correggio*; the Place of his Nativity, that he was ſo melancholic and even ſtupid, that he had no Senſe of the Value and Excellencies either of himſelf or of his Pieces, inſomuch that he returned to his Admirers the Rewards they ſent him, as if they had been miſtaken in giving a great Price for thoſe Pictures which are now above any Price whatſoever.

When Painters therefore are ſeized either with the above-mentioned Diſorders, or with other common Diſeaſes, care muſt be taken, that the common Remedies be blended with thoſe particularly calculated for redreſſing the Diſorders occaſioned by Minerals: Of which above.

CHAP. IX.

Of the Diſeaſes of ſuch as work upon BRIMSTONE.

AS Sulpur anſwers the Conveníence of Life in ſeveral Inſtances; ſo it cauſes no ſlight Diſorders in thoſe who boil or melt it, or make uſe of it in their Work. Thoſe who uſe melted or kindled Brimſtone fall into Coughs, Hoarſeneſſes, Shortneſs of Breath, and a Running in the Eyes. The Analyſis of Sulphur ſhews that it conſiſts of double Subſtance, one pinguious and inflammable, and the other acid and apt to extinguiſh Fire. Now, when the Sulphur is melted over a Fire, and much more when it is kindled, this volatile Acid ariſes in Fumes, which, being received at the Mouth, give riſe to the above-mentioned Diſorders, and particularly to the Cough and Soreneſs of the Eyes; for the ſoft and tender Structure of the Lungs and Eyes is ſignally injured by the pungent Acid. Hence *Martial**, in reckoning up the Tradeſmen and Workmen at *Rome*, ſuch as Copperſmiths, Money-coiners, Bakers, Jews, and others, who diſturbed his Reſt both Night and Day, inſomuch that he was obliged to retire to the Country, brings in the Brimſtone-workers upon the ſame Head, and diſtinguiſhes them by their blear'd Eyes.

Nec Sulphuratæ Lippus Inſtitor mercis.

The Force of a ſulphureous Steam is ſufficiently known to the Women, who, to make their Cloaths white, ſmoak them with kindled Brimſtone; beſides, they frequently ſee that it diſcolours the

* Lib. 12. cap. 57.

the purple Roſes, and makes them white; as the Poet has it.

Tingit & afflatas Sulphuris aura Roſas.

In *Germany* they uſe to ſeaſon their Hogſheads with the Smoak of Brimſtone, to make the Rheniſh Wine keep many Years without being muſty, as *Helmont* informs us in his Treatiſe *de Aſthmate & Tuſſi.* The Acid of the Sulphur therefore, ſo injurious to the Breaſt, and *Aſpera Arteria*, is the productive Cauſe of theſe Diſorders. The Story of the Adultreſs is well known, who, upon her Huſband's Approach, hid her Gallant under the Bed, and covered him with a Cloath which had Brimſtone upon it; but was forthwith betrayed, for her Gallant was ſo ſtruck with the freſh Smell of the Brimſtone, that he could not forbear ſneezing and coughing aloud. To the ſame Purpoſe is the Story of the Baker, who, ſeeing the Fire get hold of his Matches, or ſulphurated Balls, which he uſed to kindle his Wood with, and fearing they would ſet fire to the Houſe, run to put it out with his Feet, and was thereupon very near being ſuffocated: However, he was afflicted for many Days with a violent Cough and Difficulty of Breathing, by reaſon of the veſicular Structure of his Lungs, being conſtricted by the violent Acid of the Smoak: He ſeemed to receive ſome ſmall Benefit from the uſe of the Oil of ſweet Almonds and a Milk-diet; but in the Space of a Year he removed to the other World. *Etmuller*†, treating of the Diſorders of Exſpiration, has an Obſervation of a moſt obſtinate Cough and Difficulty of Breathing, proceeding from the Fumes of Nitre and Brimſtone. If

† Cap. *de Sulph.*

it be objected, that Brimſtone is commonly called the Balſam of the Lungs, I anſwer, that it merits that Title only when it is diveſted of its Acid, which is otherwiſe very plentiful. Hence both *Junchen*, in his *Experimental Chemiſtry*, and *Etmuller*, in his *Mineralogy*, informs us, that Sulphur is juſtly ſtiled, the Balſam of the Lungs, when its balſamic Fat is ſeparated from the acid, corroſive Part. Now, as *Junchen* tells us, in the ſame Place, the acid Part is ſeparated from the Sulphur, by ſubliming the Sulphur with Coral and Hartſhorn, which imbibe its Acidity.

But how a great many Practitioners, eſpecially in this Country, come to preſcribe the Spirit of Sulphur in the Diſeaſes of the Breaſt, I cannot ſee. They read in Authors, that Sulphur is the principal Remedy in ſuch Caſes, and from thence fall into a palpable Miſtake; as if the acid Part of the Sulphur was the ſame with the whole Concrete, and the Part were poſſeſſed of the ſame Virtues with the Whole. The like Miſtake is obſervable in their Preſcriptions of the long and continued Uſe of the Spirit of Sulphur in Broth, as an internal ſpecific Remedy for the Itch, and that upon the Plea, that Brimſtone is the chief Remedy, and indeed the only Baſis of the Ointments againſt the Scab. The Workmen therefore, whoſe Diſeaſes are our preſent Subject, ought to take care to avoid the Smoak of the Brimſtone; and, to appeaſe their Cough, ought to make familiar Uſe of the Syrup of Marſh-mallows, the Emulſions of Melon-ſeeds, Barley Ptiſanes, Oil of ſweet Almonds, and a Milk-diet.

CHAP.

CHAP. X.

Of the Diſeaſes of BLACKSMITHS.

DAILY Experience vouches, that Blackſmiths are likewiſe blear-eyed; which, as I imagine, is not ſo much owing to the Violence of the Fire upon which their Eyes are almoſt always fixed, as to the ſulphureous Effluvia which exhale from the hot Iron, and ſtrike or twitch the Membranes of the Eyes, ſo as to cauſe an Expreſſion of Lymph from their Glandules, with a Bleareдneſs, and often an Inflammation or Ophthalmia. It ſtands in the Records of Time, that *Demoſthenes*'s Father was a Blackſmith; and him *Juvenal* deſcribes as being blear-eyed; for, ſpeaking of *Demoſthenes*, he has the following Verſes.

Quem Pater ardentis Maſſæ fuligine Lippus
Carbone, & Forcipibus, gladioſque parante
*Incude, & Luteo Vulcano, ad Rhetora miſit.**

Having obſerved, that no other Poet, ſo far as I know, gave *Fire* the Epithet of *Luteum*; for they generally ſtiled it ſhining, roſy and clear, I thought at firſt View, that theſe Words *Luteo Vulcano* might ſignify the pale or yellow Colour which the ſulphurous Steams of melted Metals imprint in the Smiths Faces, as I have ſeen it come to paſs in the Caſting of Guns: But, upon ſecond Thoughts, conſidering that the firſt Syllable in *Luteo* is here ſhort, it cannot ſignify a yellow Colour, but one ſomewhat muddy and clayey.

* Satyr 10.

However, there being a great Quantity of Sulphur lodged in the Subſtan e of the Iron, it is no Wonder, that, while the Iron is fining, the thin ſulphureous Particles fly out both from the Iron and the Fire, and, like ſharp Stings, affect the Membranes of the Eyes, ſo as to cauſe ſharp Rheums and Inflammations. I have met with many Blackſmiths who complained of ſuch Diſorders, for which I uſe to preſcribe the Application of Milk and Barley-water, and ſuch like temperating Things; and Bleeding, if the Inflammation be great. Inwardly they may uſe Whey, Emulſions of the cold Seeds, and a refrigerating Diet, which indeed is proper for all Artificers who work by Fire. Beets in particular are commended, on account of their keeping the Body ſoluble, becauſe theſe Workmen uſe to be very coſtive: And accordingly *Martial* ſays*, *Fabrorum prandia Betæ.*

CHAP. XI.

Of the Diſeaſes of ſuch as work in LIME *and* PLAISTER OF PARIS.

LIME and *Plaiſter* are likewiſe offenſive to thoſe who burn, handle, or ſell them. Every one knows, that Parget is ranked among Poiſons; for it ſuffocates the Perſon who drinks it: Accordingly we learn from *Pliny*, that *L. Proculeius*, *Auguſtus*'s Favourite, killed himſelf by drinking of Parget, when he was tortured with an intolerable Pain in the Stomach. I have frequently obſerved that

* Lib. 13. Ep.

that thoſe, who hoil, prepare, grind, ſift, or ſell it, do uſually labour under a Difficulty of Breathing; and beſides, they are coſtive, their Hypochondria are hard and diſtended, their Faces are diſcoloured, ſo as to reſemble the Subſtances in which they work. This I have particularly obſerved of thoſe who grind the boiled Plaiſter in a Handmill and ſift it; and thoſe who form the fine Plaiſter into various Pieces, eſpecially Images and Statues for adorning Churches, great Halls, and Libraries. That the cuſtomary Uſe of theſe Effigies is very antient appears from *Juvenal**.

> *Indocti primum, quanquam plena omnia Gypſo*
> *Chryſippi invenias;*

In which Lines the Poet laſhes the rich unlearned Crew, who, to gain a Reputation of Learning among the Vulgar, adorned their Libraries with the Effigies of the Philoſophers. Though ſuch Workmen have a Cover for their Mouths, they cannot avoid receiving the flying Particles of the Parget at the Mouth and Noſe; upon which theſe Particles enter the Paſſages of Reſpiration, and, mixing with the Lymph, are formed into hard, chalkey Concretions, or, by daubing the winding Paſſages of the Lungs, intercept the Freedom of Breathing.

Here I ſhall take the Liberty to inſiſt a little on the Nature of *Gypſum*, or fine Plaiſter; for the Authors who treat of Foſſiles ſeem to leave the Nature and Conſtitution of *Gypſum* too much in the dark. *Dioſcorides* † affirms, that it has an emplaſtic aſtringent Virtue; and *Galen* backs the Aſſertion in ſeveral Places. *Pliny* aſſerts, that it

* Sat. 2. † Lib. 5. cap. 92.

is near allied to Lime. An obſtructing, ſuffocating Quality is aſcribed to it by the Moderns, particularly *Cæſalpinus*, in his Book *de Metallicis*. *Amatus Luſitanus* attributes to it a very drying Virtue. *Thoſe*, ſays he*, *who prepare Gypſum die of a Diſorder in the Head; for the exceſſive Drineſs, occaſioned by that Subſtance, renders their Heads weak, ſo that it cannot concoct and retain what it ought to concoct and retain, and thereupon the Matter falls on the inferior Parts, and ſo produces a Phthiſic.* This is the Opinion of *Amatus Luſitanus*.

But I am convinced, that *Gypſum* is of another Nature, which perhaps has not been yet taken notice of; I mean, that it has an expanding and elaſtic Virtue, not like that of Lime, but directly contrary to it. For I have obſerved oftener than once, that the Maſons in this City, which abounds with Porticos, when they pull down the antient Pillars which are ready to fall, the Houſes being ſupported upon great Beams, and place in their Room new Marble or Stone-pillars, they make the Body of the Pillars of Stone and Lime; but for the Space of about two Yards towards the End, where the Pillar muſt be joined to the Houſe ſupported by the Beams, they uſe this fine Plaiſter inſtead of Lime. This happening frequently in this City, which is the antienteſt on this Side of the *Po*, I took occaſion to aſk the Workmen, Why they did not continue to uſe Lime in perfecting their Work, as well as in the Beginning, and why that Plaiſter was preferred to Lime in the Cloſe of the Work? They anſwered, That a Wall built with Lime ſinks, but that one made with this Plaiſter riſes upwards; and indeed it is wonderful to ſee, that, five or ſix Days after the Pillars are built,

* Cent. 5. Cur. 41.

built, the great Posts or Beams, which supported the whole House, are taken away with the greatest Ease imaginable, nay, they almost fall down of their own accord; whereas, had the Pillars been built with Lime all through, the Props could not have been removed without great Difficulty, or indangering the House by the Concussion.

We conclude therefore that this Plaister agrees with Lime in its coagulating Quality, for both of them, when tempered and dissolved with Water, are known to unite and cement. But, besides that, *Gypsum* discovers a great Elasticity, in raising great Weights upwards. I have also observed, that it prèsses downwards, and every way round it; only it exerts the greatest Strength where it meets with the least Resistance; for, it is observed, that if we raise a Wall of Brick and fine Plaister upon a Beam, and carry up that Wall to unite with another old Wall above it, the Beam though ever so strong will bend downwards, having nothing but Air underneath it; and this Bending proceeds not from an excessive Weight, for sometimes the Weight is very little, but from the Elasticity of the Plaister. Further, Lime injoys this peculiar Property, that it is always moist and never decays, whence it comes to pass, that, near the Ground and at the Foundations of Houses, the Walls are almost as firm as Iron: And on the other hand fine Plaister decays and falls off of its own accord, near the Ground, but continues as solid as Lime, when it is used in the higher Part of the Wall, notwithstanding its being soaked with Rain, as it happens in Chimneys.

To return to the Subject first proposed, it is no wonder the Particles of this Plaister, conveyed through the Trachæa to the Receptacles of Breath, and there blended with the Serum which ouzes from

from the Glands, ſhould produce ſuch pernicious Effects, by preſſing down and ſqueezing the fiſtular Ducts by their expanſive Virtue, and ſo hindering the free Ingreſs of the Air. Now, for redreſſing the Injury contracted from fine Plaiſter, the Antients preſcribed various Remedies, though indeed it is no eaſy Matter to preſcribe properly. *Galen*, in his ſecond Book *de Antidotis**, recommends a Lye made of the Aſhes of the Vine-twigs. *Guainerius* † preſcribes the Aſhes themſelves, and *Sennertus* commends Mice-dung. For my own Part, I have given in ſuch Caſes, not without ſome Relief, Oil of ſweet Almonds freſh drawn, and Emulſions of Melon-ſeeds; but, generally ſpeaking, I found that ſuch as continued in this Buſineſs died aſthmatic and cachectic. I would willingly have diſſected the Corps of ſome of theſe Workmen; but neither Importunity nor Bribe will perſuade our common People, to ſuffer the Inſpection of the Bodies of thoſe who die of any uncommon Diſeaſe: Nay, when they are importuned to it, upon the Conſideration of the public Good, they fly in the Face of the Phyſician for being ignorant of the Cauſe of the Diſeaſe, which he has the Curioſity to inquire into after Death.

Lime is not ſo noxious to thoſe who handle it as fine Plaiſter. New Lime, juſt taken from the Lime-kilns, burns and exerts a fiery Force; on which Account *Paulus Zacchia* ‖ wonders, that any of theſe Kilns are ſuffered in Cities, the Evaporation which proceeds from them being unfriendly to the Breaſt. Beſides, there is nothing which, after Burning, retains the Seeds of Fire longer than a Lime-ſtone; for if you keep it a Year

* Cap. 7. † *De Ven.* cap. 8. ‖ Q. M. L. lib. 5. Tit. 4. Quæſt. 7.

Year in a dry Place, and then dilute it with Water, it ſmokes and exerts the latent Fire in ſetting the Water a boiling. In Progreſs of Time, as it moulders and grows old, it loſes a great Part of its igneous Force, and conſequently is then leſs hurtful to the Workmen; though it always retains a corroſive Acrimony which ſtimulates the Throat and Eyes, and makes the Voice rough, but is eaſily repulſed and ſubdued by drinking cold Water, and the Emulſions of Melon-ſeeds and the cold Seeds. Lime makes the Hands of Bricklayers wrinkled, and ſometimes ulcerates them, but frees them of the Scab; and for that Reaſon is juſtly rekoned a good Medicine againſt that Diſorder, being qualified, by its alcaline Virtue, to ſubdue the Acid of the Itch: And with regard to this, *Willis*, in his *Pharmaceutice Rationalis*, recommends the Decoction of Lime in a *Diabetes*, for though that Decoction, ſays our Author, may ſeem to procure a Diſcharge of Urine by its heating and attenuating Qualities, yet it checks an immoderate Flux of it, by qualifying and breaking the acid Salts which give riſe to the Fuſion of the Humours. Upon the ſame Account it is mightily cried up by Dr. *Morton*, in a Conſumption of the Lungs.

Some are of Opinion, that Quick-lime is poſſeſſed of two Salts, which remain quiet after Calcination; but when diſſolved by Water, and raiſed to a mutual Conflict, occaſion the Effervescence which is commonly talked of. But this Opinion is called in Queſtion by *John Bohon*, in his Meditations * *de Aeris Influxu*, it being plain from Obſervation, that the fixed and purer Alcalis aſſume a Heat upon the Acceſſion of a watery Moiſture, without the Colliſion of an Acid. St. *Auguſtine*

* Cap. 4.

Auguſtine * was amazed to ſee Lime boil in Water, and be cold in Oil. To conclude, we cannot but own that Quick-lime is poſſeſſed of a great Quantity of alcaline Salt, ſince the Remedies prepared from it are of univerſal Uſe againſt ſordid Ulcers, in which a Luxuriancy of Acids prevails. To correct, therefore, the Diſorders which this ſort of Workmen are ſometimes ſubject to, it will be of uſe to exhibit a warm Decoction of Mallows and Violets, freſh Butter, and Milk itſelf, which corrects the Drnieſs and Roughneſs of the Throat very effectually.

Thus far I have given an Account of ſuch Workmen as are thrown into various Diſeaſes, by the Malignity of the Minerals and Foſſiles which they handle and uſe in the Way of their Buſineſs, with compendious Cures calculated for ſuch Caſes. For upon theſe Occaſions the chief Buſineſs of a Phyſician is to reſtore the Patients to Health, with all poſſible Expedition, with proper and generous Remedies, ſince often we hear the miſerable Wretches begging the Phyſician either to kill them or cure them directly. This, therefore, is the chief Caution to be obſerved in the Cure of ſuch Workmen, that it muſt he ſhort and expeditious, otherwiſe the tedious Weight of the Diſeaſe, joined to the Grief of their Mind, produced by the neceſſitous Circumſtances of their Families, will throw them into mortal Conſumptions. To this purpoſe is that golden Saying of the Divine *Plato*,† which, I preſume, will not be unacceptable to the Reader. *When a Tradeſman*, ſays he, *is taken ill, he muſt be cured by Vomiting, or Purging, or Cauſtics, or Inci-*

* *De Civit. Dei*, l. 21. c. 7. † *Dial.* 3. p. 385.

Inciſion; for if a Phyſician tells him of a long protracted Regimen, and Bolſtering up his Head, and the like, he preſently replies, That he has not Leiſure to be ſick, and that it will be of no uſe to him to lead an idle, lazy Life, and neglect his Buſineſs. Upon this he takes leave of the Phyſician, and returns to his uſual Way of Living; and thus, if he recovers, he does his Buſineſs, or, if Nature gives Way to the Diſeaſe, is ſet free by Death.

This I have frequently ſeen in the Way of Practice, that, if Tradeſmen do not recover ſpeedily, they will return to their Shops with the Sickneſs upon them, and often elude the prolix Cures of Phyſicians. Though theſe prolix Methods will not do with Tradeſmen, yet they will ſuit a rich Man well enough; for theſe have a great deal of Time upon their Hands to be ſick in, and ſometimes the Oſtentation of Riches moves them to counterfeit a Fit of Sickneſs, as *Martial* obſerved: And there are always Phyſicians enough ready to tend them for a very ſmall Fee. *A rich Man*, ſays *Plato*, *is not confined or tied to a certain Work that he cannot be taken from, without putting a Period to his Life.* Beſides, there is a certain kind of Profeſſors who make a tedious Cure of ſuch Diſeaſes as are otherwiſe of ſhort Duration, and would terminate in a Cure of themſelves: They muſt keep to their old Method, in beginning with Lenitives, then come the Alteratives, particularly the Syrups, the Omiſſion of which would be abſolutely criminal in their Way: All theſe muſt be followed by cathartic Medicines, repeated Veneſection, and a thouſand other tedious Articles. In fine, they muſt always be at work, and ſuffer no Day to paſs without a freſh *Recipe*. So that, with a ſmall Alteration, we may apply to them the following Lines of *Horace*.

Quem

Quem ſemel arripuit, tenet, occiditque medendo,
Non miſſura cutem, niſi plena cruoris hirudo.

But, to return from theſe Digreſſions, the Cure of ſuch Workmen, as handle metallic and foſſile Things in the Way of their Buſineſs, will be happily ſhortened, if we take the principal Remedies from the mineral Kingdom, not forgetting Emollients from the vegetable Claſs, and the common Antidotes; ſuch as Venice Treacle, Mithridate, and thoſe which are ſaid to check the Malignity of Poiſons by a ſpecific Force: Purgatives and Vomits muſt likewiſe be given, and that in a double Doſe, or rather larger, by reaſon of the Obſtinacy and undaunted Nature of metallic Bodies. It will be of farther Uſe to conſult the Authors who have writ of Poiſons, particularly *Guainerius*, *Cardanus*, *Arduinus*, *Baccius*, *Paræus*, *Sennertus*, *Prevotius*, *Etmullerus*, and others; for they propoſe a long Liſt of Remedies for each peculiar Poiſon. By Way of Preſervation an Emollient and a Milk-diet are much recommended. In theſe Diſeaſes you muſt be very cautious of injoining Phlebotomy, for that is ſeldom of Uſe, unleſs there be an Inflammation in the Caſe; and care muſt be taken to obſerve the Cautions laid down above, in order to guard the Mouth as much as poſſible from receiving the offenſive Particles.

CHAP.

CHAP. XIII.

Of the Diſeaſes of APOTHECARIES.

HAVING diſpatched the firſt Part of our Taſk, let us now pay a Viſit to other Shops, and firſt of all to thoſe of the *Apothecaries*; where Health is ſaid to reſide as in her proper Manſion-houſe, though ſometimes ſhe is perhaps greatly injured there. For if we aſk thoſe who work in ſuch Shops, whether they ever receive any Injury in preparing Remedies for the Health of others? they often complain of terrible Diſorders; as in the Preparation of *Laudanum Opiatum*, in beating Cantharides for bliſtering Plaiſters, and ſeveral other poiſonous Subſtances, from which ſubtile Atoms exhale in the Beating, and fly to the Blood and Spirits through the open Paſſages of the Body. *Opium* cauſes a Stupidity and Lethargy, to avoid which *Etmuller* * adviſes the *Operator* to take Vinegar while he is imployed in preparing *Laudanum Opiatum*, there being nothing which more powerfully corrects and breaks the narcotic Sulphur of the *Opium*. In like manner it is well known, that the pounding and handling Cantharides has raiſed a Heat of *Urine*. I know an Apothecary in this City, who, after carrying in his Hand the Root of *Thorum*, and thereupon handling his Privities, was ſeized with ſo great an Inflammation of the Genitals, that it was followed by a Gangrene and a copious Flux of Blood, to the manifeſt Danger of his Life. My Lord *Verulam* † informs us, that the Bruiſing

* *De Letharg.* c. 7. † *Syl. Syl.* Cent. 10.

Bruiſing of *Coloquintida* has ſometimes thrown the *Operators* into Gripings and obſtinate Looſeneſſes. All the World knows, that the Cantharides are of a very volatile Subſtance, and highly injurious to the Bladder and the Kidneys. When the intire Fly is narrowly viewed with a Microſcope, it appears all over armed with very ſharp Points or *Spicula*; upon which Subject conſult *Olaus Borichius*, in *Bonetus* his *Medicina Septentrionalis**, where he ſays, he obſerved the *Spicula* leſſer in the Wings and Feet than in the Head, and takes that for a Solution of the Queſtion, Whether the Cantharides ſhould be uſed entire according to *Galen*, or without the Head, Wings and Feet, which *Hippocrates* orders to be cut off? Of the firſt Opinion is *Etmuller* †, who calls this a Diſpute *de Lana Caprina*, upon the Plea that all the Parts of the Cantharides have an ulcerating Virtue. The Apothecaries therefore ought carefully to avoid the taking in the Duſt which flies about in beating Cantharides, either by fortifying themſelves beforehand, or in the very Time they are imployed about them. For this End they may drink copiouſly of Emulſions of Melon-ſeeds; and, to mitigate the Heat of Urine, Whey, and Milk itſelf will be very uſeful.

Some Apothecaries are much diſordered, in the Preparation of Things which have a noiſome Smell, as that of the Ointment of Marſh-mallows, which turns the Stomachs of ſome Operators, and ſets them a vomiting. Nay, ſome are likewiſe affected with ſweet Smells; for the Influence of Smells is truly wonderful, and they produce ſurpriſing Effects, according to the Idioſyncraſy of Perſons. I am informed that in the Spring, when they make Infuſions of Roſes for their golden Syrups, and the whole

* P. 2. p. 816. † *De Diur. Animal.*

whole Shop ſmells like a Bed of Roſes, ſome *Operators* are ſeized with the Head-ach, and others with a Looſeneſs.

Thoſe therefore, who have ſuch a quick and tender Senſe of Smelling, ought to avoid ſuch Smells as much as they can, and ſtep out of the Shop every now and then to take the Air, or frequently ſmell to ſuch odorous Things as they like beſt, and uſe to refreſh them moſt. Concerning the offenſive Smell of Roſes, ſee *Sennertus* * and *Otto Tachenius* in his *Hippocrates Chemicus* ‡. *Levinius Lemmius* informs us‖, that the Inhabitants of *Arabia* are ſo over-whelmed with the exceſſive Sweetneſs of their Smells, that their only Refuge is ſmelling to ſtinking Things, as if they were a Perfume. *Gaſparus a Rejes* † has a pleaſant Story, of one *Piſcator* at the Court of *Portugal*, who was ſuffocated by the exceſſive Fragrancy of Smells, and lay for dead; but was brought to life by *Thomas a Vega*, who ordered him to be carried to the Sea-ſide, and to be rolled in the Sea-weed and Mud, by which Means, like a Sow wallowing in Mire, he was mightily refreſhed. *Bacon* ſays§, that, upon the opening of the Heaps of Spices which have lain long covered, the By-ſtanders, who approach firſt to take them out or handle them, are in Danger of Fevers and Inflammations.

CHAP.

* Tom. 1. l. 5. ‡ *De Occult. Nat. Mir.* Lib. 2. c. 9. † *Camp. Elyſ.* Q. 99. § *Nov. Organ.* l. 2.

CHAP. XIV.

Of the Diseases of the CLEANSERS OF JAKES.

I AM here in some doubt, whether the Physicians, who value themselves upon a neat and clean Appearance, will not take it ill, that I carry them from the Apothecaries Shops, which smell for the most part of Perfumes, and where they deal as in their own Province, to take a View of the Houses of Office: But, considering they do not think it beneath them daily to inspect the Excrements of the Bladder and the Belly, in Quest of the Disorders of the Body, they ought likewise to allow of the Inspection of these Places, where such Excrements are laid; and so give us leave to take a View of the Diseases of those who are imployed to cleanse them, pursuant to that Saying of *Hippocrates**, *Medico necessum est ingrata intueri & immania tractare.*

Besides, it is not at all beneath or unbecoming a Philosopher, to descend, from the Contemplation of sublime Objects, sometimes to view mean Things, and to follow the Examples of Mechanics. Thus *Plato*, in his Enquiry into the *Nature of Beauty*, elegantly represents his admired *Socrates*, (when *Hyppias* despised him for introducing, in so noble a Research, a Man enquiring, Whether it was more proper to put a golden or an earther Ladle into a fair and beautiful Pot, placed over the Fire full of good Pulse? And said, that he disdained disputing with the Man who could ask such

* *De Flat.* n. 1.

ſuch a Queſtion) as making the following Reply. " You have ſpoken well and warily, *my Friend*, " ſince it is expedient that you, who are dreſſed " in ſuch a ſplendid Manner, and excel all the " *Greeks* in Wiſdom, ſhould converſe with ſuch " a Man ; but ſurely there is nothing in my Con- " dition which can hinder me from that Piece of " Liberty." Since therefore, in our preſent Age, Medicine is reduced to the Principles of Mechaniſm, I ſhall not be aſhamed of an Acquaintance with the States and Conditions of the meaneſt Tradeſmen, having nothing more at heart than the Diſcovery of Truth.

The Accident, from which I took occaſion to write this Treatiſe of the Diſeaſes of Tradeſmen is as follows. In this City, which is very populous for its Bigneſs, and is built both cloſe and high, it is uſual to have their Houſes of Office cleanſed every third Year ; and, while the Men employed in this Work were cleanſing that at my Houſe, I took notice of one of them, who worked with a great deal of Anxiety and Eagerneſs, and, being moved with Compaſſion, aſked the poor Fellow, Why he did not work more calmly and avoid o- ver-tiring himſelf with too much Straining ? Upon his the poor Wretch lifted up his Eyes from the liſmal Vault, and replied, That none but thoſe who have tried it could imagine the Trouble of laying above four Hours in that Place, it being e- qually troubleſome as to be ſtruck blind. After he came out of the Place, If took a narrow View of his Eyes, and found them very red and dim ; upon which I aſked him, I they had any uſual Re- nedy for that Diſorder ? He replied, their only Way was to run immediately Home, and confine themſelves for a Day to a dark Room, and waſh their Eyes now and then with warm Water ; by

which

which Means they uſed to find their Pain ſomewhat aſſuaged. Then I aſked him, if he felt any Heat in his Throat, and Difficulty of Reſpiration, or Head-ach? And whether the Smell affected their Noſe, or occaſioned a Squeamiſhneſs? He anſwered, That he felt none of thoſe Inconveniencies; that the only Parts which ſuffered were the Eyes, and that if he continued longer at the ſame Work, without Interruption, he ſhould be blind in a ſhort Time, as it had happened to others. Immediately after he clapt his Hands over his Eyes, and run Home.

After this I took notice of ſeveral Beggars in the City, who, having been imployed in that Work, were either very weak-ſighted, or abſolutely blind. Now I do not wonder that the tender Structure of the Eyes is offended by ſuch an ugly Exhalation. *Ballonius* * relates the Caſe of a poor mean Workman at *Paris* who had ſore and weak Eyes, the Cauſe of which he imputes to his Trade, for he uſed to cleanſe the Streets from Dirt. But I ever was, and ſtill am at a Loſs to form a ſolid Reaſon, why the Eyes are the only Parts that ſuffer in ſuch Caſes, and how the ſoft Texture of the Lungs eſcapes, as well as the Brain, which one would think might eaſily be affected by the Steams reaching to the Noſtrils.

I am of the Opinion, that the Steam ariſing from ſuch Places, when ſtirred, is a volatile Acid; of which we may gather a probable Proof from this, That the Braſs and Silver Pieces of Money become black in the Pockets of theſe Workmen, that Braſs Veſſels, placed in Kitchens near the Houſe of Office, are uſually ſtained, and that Pictures contract a Blackneſs when reached by ſuch Exhalations. But at the ſame Time one would think

* Lib. 2. Epid.

think such *Effluvia* would offend the Lungs, there being nothing more injurious than an Acid of what Nature soever to the Lungs, as well as to the Mass of Blood, which is naturally possessed of a sort of Sweetness, which is obvious even to the Senses themselves: And yet only the Eyes are affected by such *Effluvia*. I doubt if the Curious will be satisfied with this Solution of the Matter: That, as some Poisons bear a peculiar Antipathy to certain Parts of the Body, *Cantharides* to the Bladder, and the Cramp-fish to the Nerves, so these Steams, arising from human Ordure, after three Years lying, assume a particular Nature which injures the Eyes only, and is inoffensive to the other Parts. For my own Part, I cannot rest satisfied in this Solution, and therefore do not offer it as an Argument of due Weight and Solidity.

There is nothing indeed which Physicians boast more of than this particular Enmity, which certain external Things bear to certain Parts of our Body; and, by having recourse to this, they solve the most intricate Questions: But at this rate they only explain *Obscurum per Obscurius*. *Olaus Borichius*, in *Bonetus* *, denies, that the *Cantharides* are more offensive to the Bladder, than to the other Parts, by their own specific Virtue; notwithstanding that they display their ulcerating and pungent Force upon the Bladder, both when taken in at the Mouth, and when outwardly applied in blistering Plaisters: The Account he gives of the Matter is this. The volatile Salts of the *Cantharides* being blended with the *Serum* of the Blood, and so conveyed with the Urine to the Bladder, which is not guarded with any mucous Matter, do readily gall and excoriate it, without producing the same Effect in the other Parts, where

* *Med. Sept.* p. 2. l. 8.

where the *Serum* alone is not their Vehicle, but alſo Phlegm, the Blood, and Pituita, which Mixture palls their Force. In purſuance of this Notion it may be more reaſonable to offer, that the Steams of Jakes do, with their thinneſt and ſharpeſt Particles, gall the Eyes, theſe being the moſt obvious Parts, and poſſeſſed of the moſt exquiſite Senſe; and thus, forcing out the lachrymal Juice, join with it ſo as to form a new Subſtance, which is noxious only to the Eyes, and not to the other Parts, which do not afford the like Juice. *Olaus Borichius* * relates the Caſe of a Vintner, who uſed to tremble and fall into a cold Sweat merely upon ſeeing Vinegar; upon which he aſks, Whether the acid Vapours are injurous to his Eyes and his Noſtrils?

Whatever be the Cauſe and Manner of theſe Steams, by which they affect the Eyes more than the other Parts, it is certain, that the Eyes are, by their natural Conſtitution, equally ready both for *Suſception* and *Emiſſion*. That Blearedneſs is infectious, and that a ſound Eye receives the morbific *Effluvia* from the bleared Eyes of another is plainly made out by Experience, and affirmed unanimouſly by the leading Men of our Profeſſion †. We all know that Saying of *Ovid*'s.

Dum ſpectant oculi læſos, læduntur & ipſi.

In like manner that Bewitching, which is ſaid to be performed by a Caſt of the Eye, ſeems to be brought about by a bright Emanation from the Eyes of the Inchanter, which inſinuates itſelf into the Eyes of another, as being ſomewhat allied to it, and thus infects them. Hence *Plautus* ſays,

Exeundum hercle tibi foras,
Conſpectatrix cum oculis emiſſivis.

I

* *Act. Haffn.* Vol. 4. Ob. 44.

† Vid. Gal. p. d. *Diff. Feb.* cap. 3. Sennert. T. 2. l. p. c. 4.

I know a young Lady of noble Birth, who was brought almoſt to a Conſumption, without Relief from any Remedies, till upon my Requeſt ſhe was ſnatched from the Boſom of an old Grand-mother who loved her intirely, and bred her up with other young Girls. The old Woman cried out againſt me, for poſſeſſing the Grand-child, ſhe loved ſo dearly, with the Notion of her being a Witch, and would not by any means be perſuaded, that it is the peculiar Fault of old Age to ſend forth certain Emanations from the Eyes, which are not wholeſome for thoſe of tender Years; and that, as it is the Province of the Eyes to breathe forth ſometimes Love, and ſometimes Hatred, ſo Love is more peculiarly the Province of youthful Years, than of thoſe of old Perſons, who have commonly a ſour and rugged Look.

This is not a Place for enquiring further into the Nature of the Eyes; ſo I ſhall only ſtay to quote a noble Paſſage out of *Plato**. He brings in *Socrates* unfolding the Meaning of that famous Inſcription in the Entry of the *Delphic* Temple; *Noſce teipſum.* "Have you not obſerved, ſays "*Socrates* to *Alcibiades*, that the Face of a Man "looking upon the Eye of another, is in the moſt "prominent Part, or the Pupil, of that others "Eye, exhibited as in a Glaſs? Thus the Eye at "laſt gets a View of itſelf, when it on all Hands "looks on another Eye, but is particularly careful to obſerve that which is beſt in the Eye, and "that by which itſelf ſees: An Eye therefore, in "order to perceive its own Picture, muſt look "upon another Eye."

To return to our Subject: The Cleanſers of Jakes being of neceſſary Uſe to all Cities, it is but reaſonable, that the Art of Phyſic ſhould provide

F ſome

* *In Alcib.*

ſome Relief for them; eſpecially conſidering, that the Civil Law * was ſo favourable to them, as to prohibit the offering the leaſt Injury to them, even though they ſhould caſually penetrate into another Man's Houſe. I have adviſed them to put tranſparent Bladders over their Faces, as thoſe do who poliſh red Lead; or to ſpend leſs Time at once in cleanſing the Jakes; or, if their Eyes are weak, to leave off that Buſineſs, and apply themſelves to ſome other Trade, for fear of being obliged, for the ſake of ſordid Lucre, to loſe their Eyes, and ſo beg their Bread. Experience itſelf has taught them, and indeed it is agreeable to Reaſon, that, keeping within a dark Room is very proper, as well as waſhing the Eyes with warm Water, which mitigates the Heat of the Eyes, and leſſens the Pain, which, like a Thorn puſhed in, occaſions the Contraction of the nervous Parts, and conſequently an Inflammation. If the Eyes are very red, and there is Ground to apprehend a true Inflammation, I order Bleeding, and as ſoon as the Heat of the Eyes is a little abated, I adviſe them to waſh them with Muſcadine-wine, which in this Caſe is an excellent Remedy. For it invites, in a manner, the animal Spirits to come from the Brain and the optic Nerve to return to the Eyes, from whence they had been driven by the ſordid and penetrating Damps.

In antient Times this mean Service of Cleanſing Jakes was put into the Liſt of Puniſhments, as I intimated above in ſpeaking of the *Damnati ad Metalla*. Accordingly in *Pliny* † we find the Emperor *Trajan* directing him, by Letters, actually to inflict the adjudged Puniſhment upon ſuch as were condemned, and were not releaſed in the Space of ten Years after; but to imploy the old Men, who had

* Lib. 1. ff. *de Cloac.* † Lib. 1. Ep. 41.

had been condemned ten Years before, in such Services as are not much short of the Punishment. For such *Damnati* used to be appointed to cleanse Baths and Houses of Office. Perhaps some will reflect upon me, for spending so much Time upon such Places of Nuisance; but there is nothing, how nasty soever, which is beneath the Regard of an Inquirer into natural Things, and far less of a Physician. Do but read in *Cassiodorus* † the Epistle of King *Theodoric* to the Inspector of the *Roman* Jakes, in which that great Prince cries up the splendid Jakes of the City of *Rome*, which proved such an Object of Admiration to all who saw them, that they seemed to surpass the greatest Wonders of other Cities.

CHAP. XV.

Of the Diseases of FULLERS.

THERE is nothing more frequently met with in antient Writers, than the Name *Fullones*; though at this Day we are altogether in the dark as to the kind of Work in which they were imployed. *Pliny* * makes mention of the *Lex Metalla*, which the Censors, *C. Æmilius* and *L. Camillus*, laid before the People, in order to be imposed on the *Fullones*. In *penult. Sect.* of the Law, *de Rebus Dubiis*, we find these Words. *Jabollenus, who had* Flaccus Fullo *and* Philonius Pistor, *gave to his Wife in Legacy* Philonius Pistor. But *Ulpian* ranks the *Fullones* among Traders, and *Varro* ‖ makes them part of a rural Family.

But, after all, we gather from antient Writings,

† Lib. 3. Ep. 30. * Lib. 35. *H. N.* c. 17.
‖ *De Re Rust.*

that the *Ars Fullonica* of Antiquity conſiſted in ſcouring Wool, and taking Spots and Stains out of Cloaths. For the People of *Rome* uſed to wear white Gowns, which being apt to ſtain, were often in the Fullers Hands to be cleaned, and for that End the Fullers uſed to expoſe them to the Smoak of burning Brimſtone, as *Pliny* aſſerts, and as we do to this Day, when we mean to make Silk or woollen Garments white. For the acid Exhalation of the Brimſtone has ſuch a wonderfully whitening Virtue, that it makes purple Roſes turn white.

The Streets of *Rome* being in former Times, as well as now, either dirty or duſty, the Citizens no ſooner dawbed or ſpotted their Gowns, than they ſent them to the Fullers, who waſhed them firſt with a coarſe ſort of Chalk, and then with another ſort called *Cimolia*. In Imitation of whom, at this very Day, when Oil falls upon a Coat, the good Women are wont to prevent its penetrating and ſpreading further, by immediately covering the Part with Potters Clay, or Fullers Earth, and ſo leaving it to dry and fall off.

The *Fullones* likewiſe made uſe of Man's Urine to dye Garments of a Purple Colour. *Martial* * has a noble *Epigram*, in which he recounts ſeveral Inſtances of ſtinking Things, which were all outdone by a naſty Punk; and among theſe he reckons a Fleece of Wool twice ſteeped in *Murice*. In another of his *Epigrams* he tells you ‡ *Thais* ſtinks worſe than a Fuller's Pitcher.

Fullonis avari
Teſta vetus, media ſed modo fracta via.

I paſs

* Lib. 4. Ep. 4. ‡ Lib. 6. Ep. 63.

I pass over the ingenious Coments of Interpreters concerning the *Fullones avari testa vetus* which smelled so rank, and the Cause of the noisome Smell of a *Vellus Murice bis inquinatum*, and shall only mention the ingenious Conjectures of the learned *Zarottus* in his Book *de Medica Martialis, Tractatione.* The *Fullones*, says he, the Dressers of Wool, and the Dyers made use of human *Urine* in their Way. This we have attested by *Pliny*‡, who says, human *Urine* is a Remedy against the Gout, because Fullers are never troubled with it. The same Inferrence may be drawn from *Galen*‖, who acquaints us, that *Quintus*,* a Physician of no small Note in his Time, regarded the Inspection of Urine so little, at a Time when most of the other Physicians, as well as those of our Days, formed all their Conjectures from the Piss-pot, that he used to say, *It was the Fullers Business to mind Urine.* And *Athinæus* * vouches for the same Truth, in relating the Opinion of *Mnesitheus*, an *Athenian* Physician, who affirmed, that the Urine, voided after a large Dose of Wine, is so much sharper than the ordinary, that the Scourers may use it with better Success, for the cleaning of Garments.

Upon the whole it appears, that in the Days of Antiquity the Fullers did commonly make use of Urine in scouring Wool and Cloaths, and to this very Day the same Custom is kept up. For the Wool-combers and Weavers have Barrels or Tubs in their Houses, where all the Workmen make their Water, and in which they keep their Urine till it is putrefied, in order to use it in the Way of their Business. Accordingly I observe, that, when I am called to visit this sort of Tradesmen,

‡ Lib. 28. *H. N.* c. 6. ‖ Lib. 3. *de San. Tuend.* c. 13. * Lib. 11. c. 10. Dipnos.

I perceive an odd ſort of Smell proceeding from the ſaid Tub.

Now the Uſe which our Fullers make of the Urine is this: After the Cloth, or any Woollen Manufacture, is woven, to cleanſe it from the Oil and other Filth, they fill a Wooden Veſſel with equal Parts of Urine, kept as above, and warm Water, with a certain Quaintity of *Venice* Soap; in this Veſſel they dip the Cloth, and, to make the Liquor penetrate the better, preſs it with their Feet, repeating the Work twice or thrice with freſh Sods. This done, they ſqueeze out the Liquor in a Preſs, and then waſh the Cloth with clean Water and *Venice* Soap, which renders it ſo white as readily to receive any Colour. It is probable, therefore, that the antient *Fullones* obſerved the ſame Method of putting the Woollen Garments into Urine, and trampling upon them with their Feet; which gave *Pliny* occaſion to ſay, that they are not apt to be gouty.

Rome being antiently a very populous City, in which little or no Silk was uſed, the Fullers and Dyers being frequently imployed in waſhing ſpotted Gowns, and dying Wool with Urine, uſed to produce a nauſeous Smell in the Streets by throwing out the Stone-veſſels, in which they kept the Urine, as often as they broke.

But to return; Fullers and Clothiers being obliged to paſs their Time under the Influence of the noiſome Smells of ſtinking Urine and Oil in a hot cloſe Room, and that ſometimes half-naked, are almoſt all of them cachectic, wan-coloured, ſhort-breathed, troubled with Coughs and a ſqueamiſh Stomach. For the Air being pent up, and impregnated with ſuch corrupt Smells, when it enters the Organs of Reſpiration, the Lungs cannot but ſuſtain ſome Damage from theſe oily and rank Atoms;

Atoms; and the whole Mass of Blood must necessarily be infected, these foul Particles being conveyed by the Circulation to the principal *Viscera*, and indeed all over the Body. Add to all this, that these oily, fat Vapours easily obstruct the Pores of the Skin, and consequently occasion all the Mischiefs which are known to attend a scanty Perspiration.

Hippocrates gives us several Histories of the Diseases of Fullers: But the most curious of all is his Account of a certain sickly epidemic sort of Indisposition, which carried off many Fullers*. *The* Fullones, says *Hippocrates*, *had both sides of the Groin hard and protuberant without Pain; about the Os Pubis and the Neck they had large Tubercles of the same Sort, which were followed by a Fever before the tenth Day. After they broke they were seized with a Cough. Valesius*, commenting upon this Place, applies the Case only to one particular Fuller, and takes it for a Fiction, that all Fullers were ill of one common Distemper. But the other Interpreters, such as *Foesius*, *Mercurialis*, and *Marinellus*, understand it of the whole Body of the Trade, which is favoured by the Greek Text, τῶν γναφέων οἱ βεβῶνες. We have Reason to believe, that those who follow this Trade have an unfavourable Constitution, different from that of other Tradesmen, which is produced not only by their coarse and unwholsome Food, but likewise by the Inconveniencies of their Trade. For, as I said before, the Manner of Exercise, and the Nature of Business, makes some People more liable to Distempers than others. Thus *Hippocrates* ‡ tells us of a certain Season in which the vulgar People were liable to many violent Diseases, and the Men more than the Women; and, among the Women, the

* 7 Ep. n. 39.

Slaves were in much the worſt Condition. *Pliny*‖, in like Manner, ſays, that Sickneſs rages ſometimes among the great Men, and ſometimes among the Servants and Slaves. In the Country of *Modena*, in 1690, I obſerved a rural epedimical, tertian Fever, which ſeized only the Country People; and the next Year I met with another ſort of Fever, which attacked only the Citizens, but ſpared the *Jews*; as *Palmarius* obſerved of a Plague at *Paris*, that it did not ſeize upon the Tanners, from all which it is probable, that the Body or Generality of Fullers, pointed at by *Hippocrates*, were all ill of ſome common Diſtemper through ſome unfavourable Conſtitution of the Weather; perhaps a ſoutherly Wind, which collignated the groſs Humours, and threw them upon the Glandules of the Neck and the Groin, by which Means they underwent the ſame Fate, their Diſpoſitions being much of a Piece, by reaſon of their being equally ingaged in one ſordid Trade.

To fall upon ſome compendious Method, for relieving theſe poor Tradeſmen, we muſt have recourſe to *Pharmacy*, which affords the principal Remedies for this Caſe. The chief Remedies are Emetics, eſpecially of the antimonial Kind, which are particularly calculated for the Cachexy and ſlow Fevers, uſual in this Caſe, and, by Experience, are found very beneficial to this Sort of Workmen. In like manner ſtrong Purgatives, and ſuch as carry off groſs Humours, are very proper: For thoſe of the milder Form, being unable to overcome the Crude and and ſluggiſh Toughneſs of the Humours, do rather excite Commotions, than afford Relief. The aperient Medicines, calculated for removing Obſtructions, ſuch as *Fernelius*'s cachectic Syrup, *Willis*'s lixivial Wines, Spirit of Urine, and Urine itſelf drank, are of good

‖ 6. Epid. Sect. 7. * Lib. 7. c. 5. *H. N.*

good Uſe. In Bleeding we muſt be very cautious; if the Diſeaſe be acute, it is not improper; but then we muſt not draw ſo much Blood from theſe Workmen as from other Perſons, becauſe their Blood is for the moſt Part foul and ſizy.

In the Days of Antiquity, eſpecially at *Rome*, where there were ſo many Baths for public Uſe, Workmen of ſordid Trades received conſiderable Benefit by waſhing off the Impurities contracted in their Way of Buſineſs, and retrieving their Strength in Baths, as *Baccius de Thermis* well obſerves. But now a-days thoſe excellent Proviſions are ſunk, and ſo the City-tradeſmen are deprived of a ſingular Benefit. To make up this Loſs, when they go to-bed, let them endeavour to wipe off the Matter which hinders Perſpiration, and correct the noiſome Smell which attends them, by waſhing and rubbing their Bodies with a Sponge dipped in hot Muſcadine-wine; and, by way of Precaution, upon all Holy-days, I would adviſe them to waſh themſelves at Home in ſweet Water, and walk abroad in clean Linnen. For it is not to be imagined how much the animal Spirits are exhilarated by cloathing the Body with clean Things: And for this Reaſon I cannot enough decry that vulgar Opinion, which even ſome Phyſicians entertain, that ſick People muſt not change their Shirts or Sheets for fear of becoming thereby weaker. To this purpoſe is that admirable Saying of *Hippocrates* *; *It gratifies ſick People*, ſays he, *to have every Thing clean about them, whether drink or Meat, or whatever they ſee or touch*; which Place is judiciouſly commented upon by *Valleſius*.

Hence, I cannot but wonder, that *Lazarus Meſſionerius* †, in his new Doctrine of Fevers, ſhould

* 6 Epid. Sect. 4. † Exerc. 5.

find fault with the Phyſicians who order the changing of Shirts and Sheets in Fevers; and that upon the Plea, that Shirts newly waſhed have a lixivial Quality, which produces a Toughneſs and Clamminess: For every one knows *Lixiviums* are poſſeſſed of a deterſive reſolving Virtue. It is true, he quotes the learned Lord *Verulam*'s *Hiſtory* of Life and Death, to prove that foul Linnen ſtrengthens People in Fevers; but, with the Leave of ſo great an Author, I cannot ſee how that ſhould be. *Hippocrates* indeed aſſerts, that we ought to put on clean Cloaths in Winter, and in Summer ſuch as are dirty and daubed with Oil. But *Galen* * reckons this Book to be none of *Hippocrates*'s, but written by one *Polybus*. Beſides, the Place relates to the Diet and Conduct of healthy People, the Tenor of the Diſcourſe tending to direct how fat People ſhould become lean, and lean People fat: For it is poſſible, that frequent Waſhing and Shifting is not proper for thin Bodies in the Summer, leſt they ſhould grow leaner, by too much Perſpiration and Diſſipation of the Spirits.

I cannot on this Occaſion paſs by the Words of the learned *Valleſius*; *The common Herd of Phyſicians*, ſays he, *are to be blamed, in not allowing their Patients either to change their Shirts or their Sheets, nor to waſh their Hands and Face, nor indeed any Thing which belongs to Cleanneſs and Sweetneſs, notwithſtanding the Diſeaſe continues for ſome time; as if it were of ſo much Importance to wallow in their own Filth, and as if that did not increaſe all manner of Putrefaction.* See likewiſe *Levinus Lemnius* and *Gaſpar a Rejes*. We conclude therefore, that we cannot too much recommend to Fullers and all others, who live by ſordid, ſlovenly Trades, the frequent

* In Lib. *de Salub. Diæt.* n. 3.

frequent shifting of their Linnen, and keeping their Body clean; that by this means they may prevent, as far as it is possible, the Diseases which flow from Filth and Nastiness.

Before I pass from the Fullers-shops to those of the other Tradesmen, I shall here insert a noble Remark, which the learned *Zarottus* has made upon the above-quoted *Epigram* of *Martial*. In *Martial*'s Time it was a customary Thing for the People, who walked the Streets of *Rome*, to be annoyed with the Smell of the Fullers Pitchers which were thrown out upon the Streets: And from thence *Zarottus* makes a probable Conjecture of the Occasion of the Tax laid by *Vespasian* upon Urine, mentioned by *Suetonius*. For it being probable, that at this Time Barrels or Tubs were set in public Places for receiving the Urine, which was so much made use of for cleaning Garments, and for the Purple-dye, he conjectures, that *Vespasian* took occasion from thence to impose this Tax, Money being still acceptable, let it arise from what it will: And *Cedrenus* attests, that the *Greek* Emperors followed the same Example. *Macrobius* insinuates, that such Urine-barrels were set in the public Places, when he brings in *Q. Titius* checking the drunken Judges to this Purpose: *There's no Pitcher in the Lane which they do not fill, for their Bladder is always full of Urine.*

Having upon this Occasion dwelt so long upon the Consideration of Urine, I cannot forbear mentioning what I have observed oftener than once of the aperient Power of Urine and its Efficacy in exciting the Menses. I know several Nuns who, after labouring under a Suppression of the Menses for several Months, without any Relief from the common Medicines, have recovered a clear bright Complexion by drinking their own Urine, which unlocked

unlocked the Obſtructions, and brought on the Menſes, inſomuch that they make a familiar Uſe of this Remedy.

I know very well, that the Drinking of Urine in ſeveral Diſeaſes is no new Thing, particularly in a Dropſy; though, as *Celſus* ‡ tells us, it was of unlucky Conſequence to a Favourite of King *Antigonus*, who killed himſelf by drinking his own Urine; where it is obſervable, that the ſame Author ſays, he was a Man notoriouſly intemperate. But this Remark of the Force of Urine, in promoting the menſtrual Flux, is countenanced by *Pliny**, who ſays, That the Menſes of Women are promoted by the Steams of the Urine of Boys under the Age of Puberty. And indeed, it is agreeable to Reaſon, that this Remedy may be very proper, the Experiment of which is eaſily made, eſpecially if the Urine be diſcharged in the Morning, which *Helmont* calls † the Urine of the Blood. As *Sal Armoniac* and its Spirit are of uſe againſt Obſtructions, and as our artificial *Sal Armoniac* is made of human Urine and common Salt; (the native which was formerly brought out of *Africa* being the Product of Camel's Urine in the Sand) ſo human Urine, impregnated with various Salts from the Maſs of Blood, is poſſeſſed of an aperient Virtue. *Solenander* ‖ tells us, he ordered Country People to drink their own Urine for a Hardneſs of the Spleen and Liver, and found it ſucceſsful. But, after all, I cannot but ſay, that I look upon the Urine of a healthy, ſound Man to be much more conducive to Health than that of a ſickly Perſon, as *Roſinus Lentilius* ſhews § in the *German Ephemerides*, *de*

Αὐτο-

‡ Lib. 3. c. 21.
† *De Sextup. digeſ.* n. 79.
§ Dec. 3. An. 2. Ob. 116.
* *H. N.* Lib. 28. c. 6.
‖ Conſ. 2. ſe. p.

Αυτροποσίας *examine.* But the Mischief is, it is a hard Matter to persuade People to drink other Folks Urine, unless it be the Urine of a Child; and that I take to be weaker than a Man's Urine; for it is commonly discoloured, and affords but little Spirit, or volatile Salt.

Every Pretender to Chemistry has made some analytical Enquiry or other into the Nature of human Urine. For it being, by the Consent of all, possessed of a detersive and soapy Quality, by Virtue of the various Salts of all Kinds which are lodged in it, it is not so easy to determine which of them has the ascendant. For while the *Serum*, or watery Part of the Blood, circulates in the Blood-vessels, it absorbs Salts of various Kinds, in Proportion to the Diversity of Things we eat and drink, which have so many various Tastes; these Salts it carries along with it, through the *Renal Tubuli*, to the Bladder; and from thence it comes, that the Urine has various and different Tastes, though, generally speaking, a saltish Taste with some Bitterness is the most predominant.

Dr. *Willis* wrote a very pretty Treatise of Urines, in which he allots to human Urine a great Proportion of *Serum*, a lesser Proportion of Salt, Sulphur and Earth, and a small Quantity of Spirit. That human Urine has a great deal of common Salt in it is plain from the chemical Operations, for an acid Spirit is drawn from it; but of what Sort and of what Nature the urinous Salt is, is not so easy to determine, notwithstanding that the Masters of our Profession have been at a great deal of Pains in endeavouring to do so.

Helmont * fairly confesses, that the Salt of human Urine has not its Fellow in the whole System of Nature;

* *In Sext. Digest.* n. 58.

Nature; for it differs from Sea-salt, Fountain-salt, Rock-salt, Sal-gem, Nitre, Salt-petre, Alum, Borax, and from all natural Salts, as well as the Salt of the Urine of Brutes. In the mean time I take it to be a much harder Task to determine the Nature of the Salt of human Urine, than to find out that of any other Animals; for the Brutes have a much simpler Way of Feeding than Men, who throw all in together, hard and soft, roast and boiled; however, every one knows, that from human Urine are prepared specific and generous Remedies for various Uses, especially against several chronical Diseases; and in this our Age the Spirit of *Sal Armoniac*, which is the Off-spring of Urine, passes for a *Polychrestum*.

To return to my first Subject, which was the stinking Urine made use of by Fullers in cleaning Garments, I know, that the Chemists have made their Trial both upon the Urine of a sound Man just discharged, and upon stale Urine after a long Digestion in Horse-dung; but I do not find, that there's much Difference between the Salt and volatile Spirit of the one and those of the other. The Authors of the *Collectanea Chemica Leydensia* make use only of the recent Urine of a sound Man, in their chemical Operations; but the Fullers find a greater detersive Virtue in that which is stale, and of a rank Smell, though they are ignorant of the Cause of it. *Aristotle* * puts the Question, Why the holding of ones Water long in the Body makes it stink the more when it is made? and answers problematically, That perhaps the longer Stay in the Body makes the Urine thicker and grosser; whereas that which passes soon off approaches nearer to the Nature of the Liquor which was drank. But perhaps he had given a more satisfactory Solution, if he

* Sect. 13. Probl. p.

he had ſaid, that Urine long retained in the Body is the *Urina Sanguinis*, i. e. that which carries along with it the Impurities of the Maſs of Blood; and the other is *Urina Potus*, or the Urine of the Drink only. Accordingly, it is poſſible, that human Urine, being kept long out of the Body, and fermented in the Fullers muſty rank Pitchers, may grow ſharper upon the Exhalation of the watery Humour, and ſo prove more abſterſive for the Fullers Uſe. *Columella* * recommends ſtale, human Urine, thrown in at the Mouth and Noſe, as a Remedy for ſcabby Sheep; nay, when they are all over Bliſters, he bids you lay them in a Slough, or a Ditch, where the whole Flock may piſs upon them, by which Means they will recover.

Here it may be objected, If human Urine is of ſuch ſovereign Uſe, if it affords ſo many aperient Remedies which defeat chronical Diſeaſes, and if, for that Reaſon, the Fullers of old were free from the Gout, how comes it to paſs, that theſe ſame very Fullers were cachectic, and liable to lingering ſlow Fevers, and other Diſorders ariſing from Obſtructions? To this I anſwer, that theſe Workmen became liable to ſuch Diſorders, not ſo much through the noiſome Smell of the fetid Urine, as through the Influence of the oily Wool, and their long Stay in cloſe, naſty Places, where they worked half-naked; though at the ſame Time there is no manner of doubt, but that the ſtinking Exhalations, continually received at the Mouth and Noſtrils, muſt needs taint the animal Spirits: And as ſtaying too long in a Place filled with ſweet Scents is injurious, ſo the ſame Concluſion is juſtly formed of thoſe of the unſavoury Kind, notwithſtanding that they are ſometimes of good Uſe to rouze the drooping Spirits.

Before

* Lib. 7. c. 5.

Before I make an end of this Chapter, I cannot but take notice, that in this very City (*Modena*, I mean) the Fullers Trade, which is now almoſt loſt, was antiently ſo flouriſhing and profitable, that one of the Trade grew ſo rich as to regale the People of *Modena* with a Gladiators Shew, at the ſame Time that a Shoemaker did the like at *Bolonia*. Which gave *Martial* * Occaſion to expoſe the Madneſs of theſe two Tradeſmen, in hunting after popular Applauſe by the Profuſion of their Riches.

Sutor Cerdo dedit tibi, culta Bononia, munus;
Fullo dedit Mutinæ, dic ubi Caupo dabit?

In former Times the *Modeneſe* Wool was mightily in requeſt, eſpecially that which grew upon the Sheep in the open plain Country between the *Panaro* and the *Secchia*. Hence *Columella* †, ſpeaking of the *Gallic* Wool, gives the Preference to that taken from the Sheep which feed upon the hungry Ground about *Parma* and *Modena*.

CHAP. XVI.

Of the Diſeaſes incident to OILMEN, TANNERS, *and other ſuch Trades.*

THERE are many other Shops, beſides thoſe mentioned above, which affect the Noſe, and make the Tradeſmen earn their Money with Uneaſineſs. Such are thoſe of Oilmen, Tanners, Fiddle-

* Lib. 3. Ep. 7. † Lib. 7. c. 2.

Fiddle-makers, Butchers, Fiſhmongers, Sellers of Salt-meat, Cheeſemongers, and Tallow-chandlers. For, when I venture into theſe Places, I confeſs they turn my Stomach to ſome Purpoſe, and I am not able to bear the nauſeous Smell without the Head-ach, or ſome Inclination to vomit. For this Reaſon theſe Tradeſmen are juſtly prohibited to exerciſe their Callings in the Cities; the Suburbs or adjacent Parts being allotted them for that Exerciſe, as we read in *Cæpolla**, *Paulus Zacchias* ‖, and others. In purſuing the ſeveral Heads propoſed in this Chapter, we ſhall begin with the Oilmen.

In this Country, which abounds with Nuts, there is a great deal of Nut-oil made, which all the Inhabitants uſe in their Lamps; Oil of Olives being ſeldom uſed by reaſon of its high Price: For there are no Olive-trees nurſed all the Country over, on either Side of the *Po*; and what Oil-olive we have is brought to us from *Tuſcany*. Now the Oil is drawn from the Nuts, after the ſame Manner with the Oil of Olives: For they take an Heap of Kernels ground in Mills and reduced to a ſoft Paſte, and boil it over the Fire in a great Copper Frying-pan; after which they put the Paſte into a Preſs, and ſo expreſs the Oil. While this is a doing, there riſes ſuch a black Smoak and noiſome Smell, that whoever is imployed about it cannot avoid receiving at their Mouths and Noſtrils theſe rank Exhalations. This proves a fertile Source of Evils to all the Workmen, eſpecially thoſe who turn the Paſte up and down in the Frying-pan with a Slice, for they are thereupon liable to Coughs, Shortneſs of Breath, Head-achs, *Megrims*, and *Cachexies*. Add to all this, that ſuch Workmen do always carry about with them ſordid Lamps, the Naſtineſs of

* *De Ser. Urb.* c. 48. n. 3. ‖ M. L. l. 4. T. 4. Q. 7.

of which dawbs and compacts the Pores of the Skin, and this throws them into acute Diſeaſes, eſpecially thoſe of the Breaſt, for they work at this Work only in Winter. How offenſive the Smoak of the Oil of Nuts is to the Head, is ſufficiently experienced by thoſe who write or read, or do any Manner of Work for ſome Hours by a Lamp of that Oil in a cloſe Room which has no Vent; for they are thereupon ſeized with a violent Head-ach, Giddineſs and Stupidity, and the whole Room is full of Smoak. I know ſome who have been as much annoyed by the Smoak of this Oil in a cloſe Place, as if it had been the Smoak of Coals, and particularly a certain ſtudious Perſon, who being in mean Circumſtances, and having read late at Nights by ſuch Lamps in his Cell, was ſeized with a Lethargy for ſeveral Days.

Nor is the Smell leſs offenſive which we meet with in the Shops where Linſeed-oil is prepared, which is much uſed in this Country for Lamps, eſpecially when there's a Scarcity of Nut-oil: And the Perſons who make the Linſeed-oil ſuffer as much as the Makers of the former.

The ſame is the Caſe of Tanners and Leather-dreſſers, who ſteep the Hides of Animals in Pits with Lime and Galls; and not only ſo, but tread them with their Feet, waſh and cleanſe them, and ſmear them with Tallow. By Virtue of the perpetual Stink and foul Exhalations their Complexion becomes cadaverous, their Bodies are puffed up, they breathe with Difficulty, and almoſt all of them are ſplenetic. I have known a great many of this Trade hydropical; for ſince they ſpend almoſt all their Time in a moiſt Place, and an Air defiled with the foul Exhalations which riſe from the half-rotten Hides, it is impoſſible but that the Store-houſes both of the vital and the animal Spi-

rits

its must be tainted, and the whole Oeconomy of the Body perverted. I have oftentimes observed, that neither spurring nor whipping would make some Horses pass by such Places, but, as soon as ever they smelt them, they turned about, and, without any regard to the Bridle, run directly Home, as if they had been mad. The Houses in which these Hides are dressed are placed either near the Walls of Cities, or without the Walls, as in this City of *Modena*, to prevent the infecting of the Air. And it was with this View that *Hippocrates* *, describing the Case of *Philiscus*, who died of a malignant Fever on the sixth Day, inserts these Words, *Philiscus propè murum habitabat*; by which Words (says the learned *Mercurialis* in his Comment upon the Place) the divine *Preceptor* meant to set a Mark upon the Place where *Philiscus* lived, the Places adjacent to the Walls being always more sickly than the other Parts of the Cities, by reason that all the Filth of the City, the Carcasses of Brutes, and such other Nuisances are wont to be thrown into that Quarter.

In the antient State of *Rome* the Work-houses for sordid Trades, and particularly those of Tanners, were all in that Quarter which lay beyond the *Tyber*. Hence *Martial* †, reckoning up the noisome Smells which fell short of *Thais*, mentions that of Dog-skins steeped on the other Side of the *Tyber*.

Non ab amore recens Hircus, non ora Leonis,
Non detracta Cani trans-tiberina Cutis.

And *Juvenal* insinuating, that the meaner sort of People, and those imployed in sordid Trades, lived

* Ep. 1. Sc. 3. † 6 Ep. 43.

lived on the other Side of the *Tyber*, has theſe Words,

——— *nec te faſtidia mercis*
Ullius ſubeant ablegandæ Tiberim ultra.

Further, the Air of that Quarter of the Town was infamous among the *Romans*, by reaſon of the violent Stench which flew from ſuch ſordid Trades and rank Commodities: And it was for this Reaſon that the *Jews**, who formerly lived in that Part of the Town, as being the meaneſt and moſt deſolate, had a violent Stink about them; and not for any natural or national Quality, as the Vulgar would have it.

To the Claſs of Tanners we may add the Makers of Cat-gut-ſtrings, or Strings for muſical Inſtruments; for they are liable to the ſame Diſtempers, as being obliged to live in moiſt and ſtinking Places, and continually imployed in handling, waſhing and opening out the Inteſtines of Animals. Accordingly we ſee that ſuch Workmen are commonly wan in the Face and cachectic, and their Legs are ſwelled.

The Cheeſemongers, or rather Cheeſe-makers, are likewiſe liſted into the Number of ſordid Artificers, who ſuffer through the Noiſomeneſs of the Commodity they deal in. But here we mean chiefly thoſe who make great round Cheeſes of coarſe Milk, ſuch as perhaps thoſe of *Luna* (now *Sarzana*) were in the Days of *Martial*.†

Caſeus Hetruſcæ ſignatus imagine Lunæ,
Præſtabit pueris prandia mille viis.

Such

* *Philo de Leg. ad Calum.* † Lib. 13. Ep.

Such are the Cheeſes now made at *Parma*, *Placentia*, and *Lodi*; the Fat and reeking Exhalations of which give no ſmall Trouble to the Perſons who make them. In *Italy* they are ſeldom made in the Cities, but chiefly in the Villages and Country Places. But, in the City of *Modena*, the *Jews*, who eſteem it a Sin to eat what is not prepared with their own Hands, fetch the Milk from the adjacent Villages, and make their own Cheeſe in their own Houſes; and indeed thoſe Places where they are made have a very ugly Smell, and draw all the Flies about them.

Lotichius, in his Book *de Caſei Nequitia*, tells us, there is a Lane or narrow Street at *Francfort*, where Cheeſe is commonly made, and which caſts forth ſuch a nauſeous Smell, that he takes it for the Cauſe of the Plague which afflicted that City ſo heavily.

But of all the noiſome Places which are, none exceed the Tallow-chandlers Work-houſes; for they affect not only the Work-men that make the Candles, but alſo the Neighbourhood; for which Reaſon this Manufacture is uſually made towards the Skirts of Cities, as *Zacchia* * well obſerves. For when once the Kettles, which contain Goats, Hogs and Ox-tallow, begin to boil, they throw out a nauſeous foul Exhalation which infects all the adjacent Parts; the greateſt Sufferers are thoſe who ſtand by the boiling Kettles, and take in theſe fat Particles at their Mouths and Noſtrils, which cauſe great Obſtructions in the fiſtular Texture of the Lungs, and ſo give riſe to Difficulty of Reſpiration, Head-achs, and, above all, a Squeamiſhneſs, and an Inclination to vomit. For nothing produces a Nauſea, or inverts the Fibres of the Stomach

* Q. M. l. 5. Tit. Q. 7.

mach more forcibly than Fat, even when only looked upon, without receiving it inwardly. Accordingly we ſee moſt Men have an Antipathy againſt fat and large-breaſted Women; and *Martial*, baniſhing all ſuch Women from his Fellowſhip, calls himſelf *Carnarius*, and not *Pinguiarius*, *i. e.* a Lover of Fleſh, but not of Fat. All the World knows how effectually fat and oily Subſtances, notwithſtanding the occult Acid they contain, obtund the Acid in the Stomach, which is the Source of the Appetite; and *Galen* * had Reaſon to recommend fat and *oleaginous* Food as a Remedy for canine Hunger, that Sort of Food being qualified to ſheath up the *preternatural Acid*, which vellicates the Membranes of the Stomach. *Avicenna* † in like manner adviſes Travellers to feed upon fat Victuals, and particularly Cows-fat; and gives an Inſtance of one who, upon drinking a Pint of the Oil of Violets with Tallow, was able to bear faſting for ten Days, without any Inconveniency. It is no wonder then, that Tallow-chandlers have an almoſt perpetual In-appetency and loathing of Food.

I have often obſerved, that the Women, living near theſe Work-houſes, complain of hyſteric Paſſions, occaſioned by the noiſome Smell, which ſome may wonder at, upon the Conſideration that ſharp-ſmelling Things, applied to the Noſtrils, are recommended by *Hippocrates* ‡ as a Remedy for *hyſteric Fits*. But as on the one hand ſweet-ſcented Things do not always excite hyſteric Fits, in regard that Cinnamon, Nutmegs and ſuch like odoriferous Things are Remedies againſt them, which *Horatius Augenius* ‖ cries up as infallible, and which

* Com. 21. Se. 2. † Lib. 1. Fen. 3. Do. 5. c. 2. ‡ 2. *Demor. mul.* n. 78. ‖ Lib. 12 Ep. 8.

which *Etmuller* does not condemn, and as *Hippocrates* recommends the sweeteſt ſcented Wine, in his Book *de Nat. Mul.* So on the other hand Things of an unſavoury Smell are not always proper to check their Fits, as *Foreſtus* * has well obſerved; and it is an antient Obſervation, that the Snuff of a Lamp raiſes *hyſteric* Commotions. And therefore I do not wonder that the animal Spirits are put into diſorderly Motions by the putrid Smell of Tallow; and that thereby the Uterus ſuffers Convulſions along with the Stomach, which is forced upwards by the Nauſeouſneſs of the Smell. Nay I have oftentimes ſeen Women of a tender, nice Conſtitution, fall into fainting Fits and hyſteric Commotions upon uſing the Light of a Tallow-candle.

To be further ſatisfied of the pernicious Smell of Tallow-candles do but conſult *Solenander*†, who informs you, that his Brother *John* contracted a violent Diſorder in his Lungs and his Brain by ſtudying hard by the Light of Tallow-candles. He adds, that Ox-tallow gives a more noiſome Smell than that of Sheep: But in our Country we find that the Tallow-candles never ſmell ſo rank, as when ſome Hogs-tallow is one of the Ingredients. The *Acta Haffnienſia* ‡ relate the Caſe of a Woman, who, by working hard in making Candles for the Market, was ſeized with a violent Pain in the Head, with a Giddineſs, a Redneſs in the Eyes, and a Difficulty of Reſpiration. This Woman *Olaus Borichius* cured by exhibiting firſt a Vomit, and then pectoral Waters with *Oxymel* of *Squills*, by which the Diſeaſe diſappeared; but not long after, upon diſcontinuing the Uſe of the Remedies, he was ſeized with an *Orthopnœa*, and curſing her Trade,

* L. 28. Ob. 30. † Se. 5. Conſ. 6. p. 461.
‡ Vol. 5. Ob. 86.

Trade, exhorted all of the ſame Calling, who inclined to preſerve their Breaſt, to do their Buſineſs in the open Air.

I would adviſe likewiſe the Men of Learning to abſtain, as much as they can, from Reading with a Tallow-light; and, if they cannot afford the Charge of Wax-candles, I would have them uſe Lamps with Oil of Olives, for theſe were conſecrated to *Pallas*, and were made uſe of by the antient Purſuers of Wiſdom, whoſe Works were ſaid to be elaborate when they ſmelled of the Lamp. The ſame is the Opinion of *Plempius*,* who ſays, the Smoak or Snuff of a Tallow-candle is apt to cauſe Abortion, as well as the Snuff of a Lamp, according to *Pliny*. †

When we meet therefore with Patients who follow the Tallow-chandlers Trade, we ought to follow *Borichius*'s Method in exhibiting firſt *Emetics*, eſpecially of the *Antimonial* Kind; then Cathartics, ſharp Abſtergents, and particularly ſuch as are compounded with Vinegar, as *Oxymel* of Squills, and the like, for nothing conquers and defeats Fat more effectually than Vinegar.

We muſt endeavour, both by outward and inward Means, to ſweep off and expel thoſe unctuous Particles, with which the *Viſcera* and the Skin are dawbed and ſtuffed up, and the Spirits intangled. This muſt ſtill be our chief View whether they complain of the above-mentioned Diſorders, or of any other, according to the Seaſon of the Year. For it is always to be ſuſpected, that the Humours and Spirits have received ſome Taint from the foul Particles which they ſuck in along with the Air: And for this Reaſon we muſt be cautious of Bleeding; for, after a plentiful Emiſſion of Blood, their Strength

* *De Tog. Val.* c. 35, & 59. † L. 7. *H. N.* c. 7.

Strength and Spirits quickly fail, as being generated of foul and fordid Blood.

CHAP. XVII.

Of the Diſeaſes of TOBACCONISTS, *or thoſe who make* SNUFF.

FROM theſe naſty and ſtinking Work-houſes we move next to the Places in which Tobacco is manufactured. Snuff then the Invention of the preſent Age, is, by a vitious Cuſtom, become ſo common in *Italy*, that Men, Women, and Children uſe it, and it is now reckoned into the daily Proviſions of a Family. The Tobacconiſts themſelves, who prepare it, are ſufficient Proofs of the Injury it does to the Head and Stomach. Among other Commodities imported from *Leghorn* to *Modena*, there are certain Cakes or Rolls made of Tobacco-leaves twiſted round, which the Tobacconiſts open and untwiſt, and put into a Mill to be ground. This Mill is turned round by Horſes blind-fold, and in the mean Time the Workmen ſtand by and feed the Mill with Tobacco-leaves every now and then, and, before they are well inured to that Exerciſe, uſe to be ſeized with a violent Head-ach, Megrims, Squeamiſhneſs, and a continual Sneezing. For in the Grinding there flies off ſuch an Exhalation of ſmall Particles, eſpecially in Summer, that all the Neighbourhood make grievous Complaints of the noiſome Smell. Nay, the very Horſes which turn the Mill are ſo affected with the ſharp and offenſive Exhalation, that they frequent-

ly ſhake their Heads, and cough, and blow their Noſtrils. I knew a *Jewiſh* Girl, who, after working a-while, in opening theſe Rolls of Tobacco, was ſeized with a violent Inclination to vomit, and frequent Stools; and ſhe told me herſelf, that the hemorrhoidal Veſſels voided a great Quantity of Blood, while ſhe ſat upon the Rolls.

It would be ſuperfluous to ſay any thing here of the Uſe and Abuſe of Tobacco, *Magnenus* having writ a peculiar Treatiſe upon that Head, and the learned *Etmuller* having, in a Piece lately printed at *Francfort*, given us an exact Hiſtory of Tobacco, and the Medicines prepared from it. It is acknowledged by all, that many uncommon Diſorders enſue upon the exceſſive Uſe of it; and there are ſeveral Obſervations of that Nature to be met with in Authors. *Helmont* *, who abhors the Smoaking of it, ſays, he found the Stomach tinged yellow by its Smoak, and aſcribes an occult Poiſon to it. *Simon Pauli* and *Richard Morton* † affirm, that by ſmoaking Tobacco the Lungs gradually become dry and withered. *Bonetus* ‡ demonſtrates, from the Diſſection of many Bodies, what terrible and abominable Diſorders accrue both to the Lungs and the Brain, not only from the Smoak of Tobacco, but from the Uſe of Snuff. That Tobacco, like all other *Sternutatories*, is poſſeſſed of a great deal of Acrimony, is plain from its vellicating the Noſtrils, as well as from the Taſte it has when chewed, and the virulent Smell which taints the Breath of thoſe who uſe it.

Now theſe Smells and flying Powders, which are the ſharper, for being the thinner and ſmaller, being

* In Cuſt. errant. n. 46. ac in tra. de mor. occaſ.
† Quadr. Bot. ‡ *De Phthiſ.* c. 6. Sepulch. t. 2. l. 4. ſe. ult.

being received in such a liberal Quantity at the Mouth and Nostrils of the Tobacco-workers, they stimulate and dry the tender Coat of the Lungs and *Aspera Arteria*, and with their foul Steams not only cloud the animal Spirits in the Brain, but produce a narcotic Effect upon them; and at the same time corrupt the Digestion of the Stomach by enervating the Acid it contains.

I have no Intention to fasten an infamous Character upon so noted a Plant, dignified with the Title of Queen, and so acceptable to all the *Europeans*, especially in those Countries where the Consumption of Tobacco makes a considerable Branch of the public Revenue. The most celebrated Writers have spoke very largely of the Virtues of Tobacco; and it is justly intitled to a Place among the physical Plants. It is only the excessive and intemperate Use of it which is blame-worthy; and it is that which brought it to a Diversity of Fortune; and to bear an ill Name as well as a good one. It is sufficiently made out by Experience, that Tobacco-leaves contain a great deal of volatile Salt, by Means of which they exert an abstersive and vulnerary Virtue, in checking the luxuriant Acid; and with regard to this Virtue *Epiphanius Ferdinandus* ‖ cries up the Decoction of it for a mighty Secret in an Empyema. All the World knows, that Tobacco-leaves chewed in the Mouth draw forth a great deal of Phlegm: But there is a great Mistake committed in this Custom; for the Chewing of it, and the throwing out such Plenty of Lymph, is not equally healthful for all. In fat Bodies, for Instance, and such as have gross Juices, Tobacco is of good Use, but in those of a bilious, hot Temperament it is offensive, as *Piso** has

‖ Hist. 22.

* Lib. 4. c. 45. de Re. Nat. & Med. ut. Ind.

has well obſerved. I have known a great many brought to a Conſumption by chewing Tobacco, who flattered themſelves that their Health was preſerved by the continual Flux that iſſued from their Mouths, and could hardly be perſuaded, that they did themſelves an Injury in thus robbing the ſalival Glands, and indeed the whole Body, of their nutritious Juice. So bewitching is that incurable Cuſtom of Chewing and Smoaking Tobacco, that as it will ever be condemned, it will ever be retained.

Several Authors affirm, that the Chewing or Smoaking Tobacco does ſo cloy the Appetite, that it will enable Men to travel long Journeys without being hungry. *Piſo* † ſays, That in travelling through Deſarts he found that Benefit by chewing Tobacco, that he was neither hungry nor tired. *Helmont* ‡ makes the ſame Aſſertion, and ſays, It it is owing not to any Virtue that the Tobacco has of ſatisfying the Appetite, but to this, that it ſinks the Senſe of the Want, and clogs the Exerciſe of the Functions. *Etmuller* is much of the ſame Mind; for he ſays, That Tobacco, like all other Narcotics, ſtupifies the Spirits, and, by its volatile oily Salt, blunts the ſaline Ferment of the Stomach; ſo that the Sitmulus of Hunger is not felt. Thus I have often obſerved the Smoakers and Chewers of Tobacco to labour under an almoſt continual Inappetency, not unlike the great Drinkers. For as Wine and its Spirit enervate and break the acid Ferment of the Ventricle, ſo the frequent Chewing and Smoaking of Tobacco does ſo blunt the *Saliva*, and pall the Stomach, that the Senſe of *Suction* is not at all perceived. *Plempius** joins in the ſame Sentiments, affirming, that

† In *H. N.* & Med. utriuſque Ind. l. 4. c. 43. ‡ In ra & de Mort. Occaſ. * *De Tog Nat. Tuen.* c. 4.

that Tobacco does not nouriſh in the leaſt, but quells the hungry Stomach, by calling a great Plenty of pituitous Humours to the Mouth, and ſwallowing them down.

In the mean time I cannot but wonder how the Noſe, in Imitation of the Art of Cookery, came to be ſo ingenious as to find ſo many Arts and Ways for ſerving up and variouſly preparing Tobacco, that every one has to gratify his Noſe ſome coarſe, ſome ſmall, ſome ſcented, ſome unſcented, and not only the Noſe, but even the Palate is variouſly gratified by the Smoak, which they throw out at Noſe and Mouth: In ſo much that I never ſee theſe Uſers of Tobacco greedily cramming the Powder into their Noſtrils, or ſucking the Smoak, but I think of *Orlando*, deſcribed by *Arioſtus*, as if, after loſing his Brains, he were ſucking them in again at his Noſtrils; or of *Cacus* ſtruggling with *Hercules* in the Cave of the *Aventine* Hill, and belching out Smoak from his Chops.

Faucibus ingentem fumum, mirabile dictu,
Evomat, involvatque domum Caligine cæca.

But the main Queſtion is, What Relief the Art of Phyſic affords to Tobacconiſts? Why, ſince the occaſional Cauſe cannot be removed, and ſince the Proſpect of Profit renders the Smell of Tobacco leſs noiſome to them, I would adviſe them, in grinding, ſifting or handling this Commodity, to endeavour to keep off the flying Atoms, by covering their Mouths and Noſtrils, taking the freſh Air, frequently waſhing their Face with cold Water, rincing their Throat with Vinegar and Water, and even drinking of it; for nothing is better qualified to carry off and blunt thoſe Particles which adhere to the Throat and Stomach, than ſuch Mixtures as have Vinegar for an Ingredient. Emulſions of Melon-ſeeds, Barley-ptiſanes,

Cow's Whey, and Rice boiled in Milk, will all be of Uſe to defend the Throat and Stomach. Conſidering that they uſe to work in dark and moiſt Places, eſpecially while the Leaves are grinding in the Mill, and that they uſually complain of the Head-ach and a Squeamiſhneſs, I uſually preſcribed Vomits, that being the ſhorteſt Way to fetch up the ſmall Powder which had got into the Stomach, and of its own Nature incited to vomiting.

Conſidering the Tradeſmen receive no ſmall Detriment from Smells, whether ſweet or harſh, I had once a mind to make a Digreſſion here of the Nature of *Odours*; but the Extent of that Taſk ſcared me from undertaking it; for I was afraid that, if once I dipped into it, the Pleaſantneſs of the Subject would carry me too far out of my Way. While I dwelt upon this Thought, and obſerved that a great many Things have been ſaid of *Smells*, both by the antient and modern Philoſophers and Phyſicians, both that a particular and exact Hiſtory of them is yet wanting, I thought upon a Method in which both the natural and phyſical Hiſtory of Odours might be compiled, by examining their Nature according to the philoſophical Maxims of both the Moderns and the Antients; and enquiring into their Differences, Diviſions into Claſſes, Properties, Idioſyncraſies, Cauſes, native Soil, Compoſition, Mixtures, then the *Res Unguentaria*, or Perfumes of the Antients; and then proceeding to the Medicaments taken from Odours, in order to ſee whence the medicinal Uſe of Spirits, ſo much in vogue among the Moderns, took its Riſe; and laſtly, going through the Odours mentioned in the Bible, thoſe uſed by the *Jews* in their Sacrifices, and thoſe which the *Greeks*, *Romans*, *Egyptians*, and *Indians*, made uſe of in their Perfumes and Expiations, in order

to

to appeaſe or invoke the Gods. This I foreſaw would be a large Field of Hiſtory, comprehending in one Performance whatever lies ſcattered in Authors, or is ſtill to be diſcovered by Experiments. In antient Times *Petrus Servius*, a *Roman* Phyſician, wrote a philological Treatiſe of Odours, and therein promiſed a phyſical Treatiſe upon the ſame Subject, but, ſo far as we know, he did not make his Word good: As for my Part, I will not venture to pawn my Word for a Work of that Importance, which requires more Time and Pains than I can afford: For a great many Things which at a Diſtance, and at firſt View, ſeem plain and eaſy, are afterwards found to be difficult, and intricate: Which gave the *Poet* occaſion to ſay,

Tollimus ingentes animos, & maxima parvo
Tempore molimur. ——— ———

CHAP. XVIII.

Of the Diſeaſes of the BEARERS *of Corps.*

THE Buſineſs of Bearers and Undertakers for Funerals was more laborious in antient Times than it is now; for they took a great deal of Pains upon the Corps in waſhing, anointing, burning, and gathering the Aſhes into Urns; beſides which, they imployed Embalmers, Burners, and others of the meaner Sort of People: Though now a-days the Corps are only carried by the Bearers to the Church or Church-yard, and ſo interred. But conſidering that in Cities and Towns, eſpecially in *Italy*, every Family has its own Tomb in the great Churches, (whereas the common People are interred promiſcuouſly at large in

wide Graves in their reſpective Pariſhes) the Bearers, imployed in Towns, being by that means obliged to go down to foul Vaults full of half-rotten Corps, are thereupon liable to many pernicious Diſeaſes; eſpecially malignant Fevers, ſudden Death, Cachexies, Dropſies, ſuffocating Catarrhs, and other diſmal Diſtempers. Accordingly, we ſee they have always a wan, cadaverous Countenance, as if they were already fit for the Grave: And, indeed, there cannot be a more effectual Means for raiſing peſtilential Diſtempers than thus going down into Sepulchres, and breathing for ſome Time in that noxious Air, which pollutes the ethereal Nature of the animal Spirits, and renders them unfit to execute their Office, that is, to ſupport the whole vital Machine. *Hippocrates* * juſtly obſerved, That *Air is at once the Author of Life, and of Diſeaſes:* Doubtleſs then, the Air of Sepulchres muſt needs be very pernicious to the Bearers, and corrupt the whole Maſs of Blood. In the Days of Antiquity the public Slaves, who were half-ſhaved, and called *Inſcripti*, were doomed to this mean Office, as well as to the digging of Metals, and the cleanſing of Jakes. Whence *Martial* ſays,

Quatuor Inſcripti portabant vile cadaver,
Accipit infelix qualia mille Rogus.

But, in the Age we now live in, ſordid Lucre and neceſſitous Circumſtances conſtrain Free-men to perform the Office, though they have but very ſorry Luck; for I never knew a Bearer an old Man in my Life-time. All the World knows how much the Corruption of all ſorts of Carcaſſes tends

* *De Flat.* n. 6.

tends to defile the Air; for frequent Experience has taught us, that fatal Plagues enſue upon great Battles, by reaſon of the Dead lying unburied, and upon the indiſcreet opening antient Sepulchres. It is no wonder, therefore, that the Bearers and others concerned in Funerals do, by handling dead Bodies, opening the Doors of Sepulchres, and going down into them, fetch up peſtilential Diſeaſes. There is a known Story of one *Piſto*, a Bearer, who buried a young Man finely dreſſed up in Cloaths, with new Shoes on the Feet of the Corps; and a few Days after, finding the Church-doors open, opened the Tomb, went down into the Grave, and took the Shoes off the Corps; but had no ſooner done, than he fell down and expired upon the Corps, and ſo ſuffered a juſt Puniſhment for violating the Sepulchre.

This filthy Smell is frequently perceived in Churches, eſpecially in Summer, by reaſon of the great number of the Tombs, and their being frequently opened, which cannot be but very noxious to the People, notwithſtanding the Churches are perfumed with Frankincenſe, Myrrh, and other odoriferous Things. Upon this Conſideration *Lilius Gyraldus*, in his learned Treatiſe, *de Vario ſepeliendi Ritu*, juſtly condemns that modern Cuſtom of burying in Churches: For in antient Times, and in the earlieſt Days of Chriſtianity, the Corps of Martyrs only were interred in the Churches, the reſt of the Faithful being buried in Church-yards or near the Churches. The People in the Country bury their Dead more decently than the Inhabitants of Towns; for they put them into a Wooden Coffin, and, having digged a deep Pit in ſome Field near their Pariſh-church, put them under Ground; the whole Ceremony being performed by Relations and Neighbours. It was a laudable Cuſtom a-

mong the *Romans* to carry their Dead out of Town, as the *Athenians* did to the Κεραμικον, where they put them upon a Funeral-pile, and preſerved the Aſhes in Stone or Braſs Urns. The Roads, called *Via Latina* and *Flaminia*, and eſpecially the military Ways or Cauſeys, were famous among the *Romans* for a Frequency of Monuments. Hence *Juvenal.* †

——*Experiar, quod concedatur in illos,*
Quorum Flaminia tegitur Cinis, atq; Latina.

Now this they did, according to *Gyraldus*, for three Reaſons: Firſt, That theſe Monuments might invite the Paſſengers to the Purſuit of Virtue; and hence it is that the antient Epitaphs and Inſcriptions were all addreſſed to the *Viatores*, or Paſſengers: Secondly, That, if the City ſhould be beſieged, the Citizens might be invited to fight more chearfully for the Aſhes of their Relations: Thirdly, and chiefly, That the Town might remain untainted with the foul *Effluvia* which flow from putrefied Corps. Only, by a peculiar Privilege, the veſtal Virgins and the Emperors were allowed to be interred within the Town. *Tully* * informs us, That, by the Law of the Twelve Tables, the Funeral-pile, though out of Town, was to be ſixty Foot diſtant from other Men's Houſes; and that, not for fear of Fire, as he tells you, but to avoid the filthy Smell which attends the burning of Corps. So careful were the Antients in providing for the Safety of the Community, by keeping the Air clean, that they removed out of Town not only all unclean Things, but even the Aſhes of their own Relations. Nay, *Heſiodus*,

† Sat. 1. * 2 *De Leg.*

Hesiodus was against the very dunging of the Grounds, because the Wholsomeness of the Air ought to be preferred to the Fertility of the Soil. And by an Edict of the *Ædiles*, or Church-wardens, the bringing of any thing made of Hides or Skins into the Churches was prohibited; for it was unlawful to put any thing in the Churches that came from a dead Thing.

To conclude, it is but reasonable, since the Bearers and Funeral-officers hide under Ground the Corps of the Deceased, together with the Errors of Physicians, that the Art of Physic should requite them in a beneficial Way for thus supporting the Dignity of the Profession. For this End they must be cautioned, to guard themselves in doing their Office as much as they can; that is, to observe the Cautions usual in the Time of a Plague, to wash their Mouths and Throats with sharp Vinegar, to carry in their Pockets Handkerchiefs soaked in Vinegar, to refresh the Spirits by odoriferious Things, and to let the Tombs be open some small Time before they go into them, that so the imprisoned Steams may gradually fly out. When their Business is over, let them return Home and shift themselves, and endeavour to go as clean in their Cloaths as their Circumstances will allow them. If they are seized with any Distemper, they must be attended with a great deal of Circumspection. Whenever I have to do with this sort of Men, I let blood but very sparingly, for their Blood is of the same colour with their Faces; Purgatives being more proper for them who labour under a foul Cacochymy, and are likelier to die than to live.

CHAP.

CHAP. XIX.

Of the Diſeaſes of MIDWIVES.

THE Office of Midwives is quite different from that of Bearers, ſince the former take Care of Man's Entry into the World, and the latter aſſiſt at his Departure from it; but both Offices, reſpecting the Origin and the End of Life, are ſufficient Evidence of the State of Humanity. Though Midwives do not incur ſuch Danger by aſſiſting Women in Child-birth, as the Bearers do by the Interring of Corps; yet they do not always eſcape free when they receive the Birth, together with the Flux which comes from the Uterus. I need not mention the Corruption of the *Lochia*, the Diminution or Suppreſſion of whoſe Flux, for a few Hours, is enough to kill the Woman who lies in. Neither am I unacquainted with the many Queſtions which have been, and ſtill are put, relating to the corrupt Nature of the *Menſtrua*. *Pliny* * ſays, *The menſtrual Flux has ſuch noxious Qualities, that it ſours Stum, blaſts Corn, kills what comes a-near it, and burns the Fruits of the Earth.* But *Fallopius* † endeavours to clear it of ſo heavy a Charge, aſſerting, That the menſtrual Blood is good, and in its own Nature laudable, if the Woman be ſound; that it is the ſame with that which nouriſhes both the Woman and the *Fœtus*, and that it is only the Quantity of the Blood which moves the Womb to Excretion.

This

* Lib. 7. *H. N.* c. 15. † *De Med. Purg.* c. 1.

This Opinion is favoured by *Rodericus a Caſtro*‡, and by *Ballonius*‖, who ſays, *The menſtrual Evacuation is peccant in Quantity, but not in Quality*, and quotes a noted Place of *Hippocrates*'s Writings†, where he calls the menſtrual Flux not *fluorem*, but *florem* [τα καλαμήνια ἀνθεῖν.] Nay, *Ballonius* * ſays elſewhere, That *the menſtrual Flux is not peccant either in Quantity or Quality, but is brought about by the ſecret and wonderful Counſel of Nature and Divine Providence, for a future Procreation.*

I have often obſerved with Admiration, that ſome Women, when worn out, and brought almoſt to a Conſumption, by Diſeaſes of long Duration, and particularly a noble Nun, when quite ſpent with a ten Years Sickneſs which confined her to her Bed, have ſtill had their Diſcharges every Month regularly, though indeed the Quantity did not exceed a few Drops. But, after all, I am ſtill of Opinion, that the menſtrual Blood has ſomewhat of Malignity in it: For the menſtrual Flux is not only an Excretion, but a Secretion performed by Virtue of ſome Fermentation unknown to us, the ſaline and other Particles being precipitated to the Glandules of the Uterus, and ſo thrown out of the Body.

This Fermintation and inteſtine Perturbation is ſufficiently experienced by the Women, both when their menſtrual Flux approaches, and when it is actually upon them; for which Reaſon ſome call it a menſtrual Fever; that is, a medicinal Fever, which is followed by a Briskneſs of the Spirits, and a better State of Health. *O ribaſius* *†, writing upon

‡ *De Uni. Mul. me.* ‖ Lib. 2. c. 10. † Lib. 2. *Conſ. Hiſt.* * 2. *De Momul.* *† Vid. *Bra. ſau.* l. 5. Aph. 36.

upon this Subject, ſays prettily, That *Women's Joy gives Matter of Grief, and their Grief turns to Joy.* If we may credit the Hiſtories committed to Writing, the menſtrual Blood is given for a Love-potion, and enjoys the Virtue of making People mad; by this Means they ſay *Caius Caligula* was bewitched by his Wife *Cæſonia.* Among the chirurgical Cautions, relating to the Cure of Wounds, *Fragoſius*, *Lanfrancus*, and other celebrated Surgeons aſſert, That the Lint ſhould not be made of Women's Linnen or Shifts, notwithſtanding they are frequently waſhed; and that by reaſon of the Virulency of the menſtrual Blood: Nay, they require that the wounded Perſons ſhould not be ſeen nor looked upon by Women under their menſtrual Flux, or by Men heated with venereal Embraces, by reaſon of the goatiſh Steams which come from them. So that what is related by *Pliny* ‡, and by *Joachimus Camerarius* ‖ in *Gaſparus a Rejes*, is not ſo fabulous as ſome think. That the Bees purſue Men who are juſt come from a venereal Encounter, as being mightily delighted with the Sweetneſs of Odours, and very obſervant of Chaſtity.

But let the menſtrual Flux be what it will, the Evacuation from the Uterus, which uſhers in and ſucceeds the Birth, is undoubtedly tainted with Malignity and Virulency, as appears from the ſudden Suppreſſion or Diminution of the Flux of the *Lochia*, which gives riſe to malignant Fevers, which quickly carry off the Patient; whereas a ſimple Suppreſſion of the menſtrual Diſcharge, is not attended with ſuch fatal Conſequences; for if it renders Women ſickly and cachectic, it does not carry them off ſo ſpeedily. In ſhort, the *Fœtus* ſucks

‡ Lib. 7. *H. N.* c. 7. ‖ Cap. El, Q. 54.

ſucks out of the Blood or Chyle the moſt ſpirituous and pure Part; ſo that the pregnant Woman is robbed of her moſt ſpirituous Juice, by which Means it comes to paſs that a peccant Redundance of Humours prevails, not only in the Maſs of Blood, but in the very Subſtance of the Uterus, which, while the Woman is with-child, becomes very thick, as *Graef* and *Sylvius* have obſerved; for the more the Womb is diſtended, the more its Subſtance is incraſſated. This Redundance of Humours, which lay quiet and eaſy before Child-birth, is upon this Accident put into Motion, and kills the Woman, unleſs it be carried off ſpeedily, and by a continual Efflux.

Now the Midwives, ſtanding ready to receive the Birth with expanded Hands, and continuing in that Poſture for ſeveral Hours, receive no ſmall Damage upon their very Hands from the dropping of the *Lochia*, inſomuch that ſometimes their Hands are inflamed and ulcerated by the ſharp corroſive Matter. *Fernelius* *, admiring the Force of contagious Diſeaſes, relates the Caſe of a Midwife, who, by laying a Woman, contracted ſuch a Diſorder in her Hand, that it corrupted and fell off; adding, that the Woman ſhe had laid was poxed. So that as a Nurſe, who ſuckles a foul Child, receives the firſt Infection in the Breaſts; and a Child, that ſucks a pocky Nurſe, diſcovers the firſt Seeds of the Pox in the Mouth and Palate; ſo this Midwife felt the dire Effects of the Contagion in the Hand upon which the pocky *Lochia* dropped. This your expert and prudent Midwives are ſufficiently aware of; for, when they are obliged to lay a pocky Woman, they wrap their Hands up in Linnen Cloaths, and waſh them often in Water and

* 2. *De Abd. Morb. Cauſ.* c. 14.

and Vinegar. Add to all this, That the Midwives receive at Mouth and Noſtrils the noxious Steams ariſing from the Flux of the Womb, and, which is yet worſe, they cannot arm themſelves againſt them with ſweet-ſcented Odours, theſe being apt to throw the Women in labour into hyſteric Fits.

Perhaps the Midwives are not ſo much expoſed to Danger in *England*, *France*, *Germany*, and other Countries, where the big-bellied Women bring forth their Children in Bed, and not upon perforated Stools as they do in *Italy*; before which the Midwives are obliged to ſit bending forward with expanded Arms waiting the Egreſs of the *Fœtus*, and are ſo fatigued with Toil and patient Attendance (eſpecially when they wait upon Women of Quality, or ſuch as have hard Labour) that immediately upon the Delivery they run Home quite fatigued, and curſe their Profeſſion.

I have narrowly inquired, and am ſtill at a loſs to determine, whether the Women among the Ancients uſed to bring forth upon Stools or in Bed. But this and many other curious Things had not been unknown, if the Flames had not deſtroyed the Library of *Th. Bartholine*, where that celebrated Author had an elaborate and finiſhed Treatiſe *de Puerperio Veterum*. However, the Cuſtom of bringing forth in Bed begins now to obtain in this Country, which I take to be a laudable Practice; becauſe by this Means many Inconveniencies are avoided: For, unleſs they have a very eaſy Delivery, it falls out very often that the Women are carried, after ineffectual Throws, from the Stool to Bed, and from Bed to the Stool again, to the great Detriment of their Strength; or, after they are delivered, fall into violent Hæmorrhages of the Uterus, and exſpire upon the Stool. Beſides, all Brutes, having no other Midwife but Nature, lie

upon

upon the Ground while they bring forth; and so teach us, that it is easier to bring forth in a lying Posture, than when the Body is raised or sitting. Some may reply, that the Brutes are forced to lie down for fear their Young-ones should fall down and be dashed to death, or because they look flat down to the Earth, and their Womb has a different Position from that of the human, so as to render the Exclusion of the *Fœtus* easier. But, in Opposition to this, we see that the little small Animals, such as little Bitches, Cats, and Mice, who have no occasion to fear the Dropping of their *Fœtus* from on high, do all bring forth in a lying Posture. Neither do I believe, that the upright Position of the Womb contributes much to the Facility of Delivery; for we may readily apprehend, that the *Fœtus*, once stripped of its Coverings, and pressing for an Exit, is speedily hurried to the Vagina, and makes its Exit often in a preternatural Posture, as with the Hands stretched out, or any other Way.

In fine, the Midwives, who would perform their Office without the Danger of Infection, ought every now and then, when they have any Respite, to wash their Hands and Arms in Water and Wine: After their Business is over they ought to wash their Faces and Hands in Water and Vinegar, and shift themselves; and, in a word, they ought to take a nice Care all along to have clean Things about them. A certain old Midwife told me, that, when she was called to attend a pocky or cachectic Woman, she used to stay to the very last Throws before she set her upon the Stool, by which Means she kept her Hands from being so long exposed to the dropping of the contagious *Lochia*.

CHAP.

CHAP. XX.

Of the Diſeaſes of NURSES.

AFTER the Midwives have done their Office, they are ſucceeded by the Nurſes, who are likewiſe ſubject to various Diſeaſes in the Courſe of Suckling. By Nurſes here I underſtand not only the hired Nurſes, who ſuckle other Folks Children, but likewiſe thoſe who ſuckle their own. Now the Diſeaſes to which they are commonly ſubject are Conſumptions, hyſteric Paſſions, puſtulous and ſcabby Eruptions, Head-achs, Vertigos, Difficulty of Breathing, and Weakneſs of the Sight; beſides many other Diſorders, eſpecially in their Breaſts, occaſioned by the Redundancy or Curdling of the Milk; for thereupon the Breaſts are inflamed and impoſthumated, and the Nipples chopped. It is eaſy to conceive how long Suckling cauſes a Conſumption: For when the Child becomes big and ſucks a large Quantity of Milk (whether it be generated of the Blood according to the Ancients, or rather of the Chyle according to the Moderns) the Nurſes Bodies are robbed of their nutritious Juice, and ſo exhauſted, that they grow thin and ſlender; eſpecially if they ſuckle Twins, or, for the Sake of Profit, ſuckle another Child beſides their own. That itchy Eruptions will affect the Nurſes may readily be inferred from their handling, dandling and carrying in their Arms their Children, who are generally troubled with Tettars and the *Cruſta Lactea*; for the Children, who have not the Benefit of this Evacuation, are uſually ſeized with violent Diſtempers, according

ing to *Hippocrates** : Beſides the milder Part of the Blood and Chyle being conveyed to the Breaſts, and there converted into Milk, the ſerous and ſalt Humours are only left for the Nouriſhment of the Body, and theſe break out in Blotches and Scabs. *Hippocrates* † aſſerts, That a Nurſe, who was troubled with cuticular Eruptions while ſhe ſuckled, was clear of them in the Summer after weaning the Child. This Paſſage is admirably well interpreted by *Martianus*, in Oppoſition to *Valeſius*'s Comment, who fancied, that the Nurſe had been without her Menſes while ſhe ſuckled, and that the Puſtules took riſe from the ſubſequent Cacochymy of her Body. Theſe Eruptions, ſays *Martianus*, are rather to be imputed to the Errors committed by Nurſes in the Way of Eating and Drinking, for they think to increaſe their Stock of Milk by much Feeding: And beſides, all Sucklers uſe to have a great Appetite. Add to theſe the Watchings, and Interruption of Sleep, which Nurſes frequently undergo, for by that Means Crudities breed in their Body, and, if joined by any ſalt Humour, become a fit Matter for Puſtules.

Hippocrates ‡ gives us the Hiſtory of another Nurſe to this Effect: Therſander's *Wife, who ſuckled her own Child, being troubled with a* Leucophlegmatia, *or a ſort of Dropſy, though not to a great degree, was ſeized with an acute Fever. Her Tongue was parched and grew very rough, with Puſtules upon it, and ſhe voided at the Mouth Worms. On the twentieth Day the Criſis was not perfect.*

Valeſius imputes the acute Fevers of Nurſes to the Suppreſſion of the menſtrual Evacuation; but *Martianus*'s Account of the Matter ſeems to be much juſter. For we muſt not take Nurſes to be in

* *De Morb. Sac.* n. 7. † 2 *in* 2. Epid.
‡ 4. Epid. t. 14. *ex Valeſ.*

in a *preternatural* State, becauſe their Menſes do not flow while they ſuckle, for then the menſtrual Purgation would *naturally* accompany the Suckling: But the Blame is to be thrown upon the Errors in Diet, the reſtleſs Nights, and the Depredation of the nutritious Juice: For *Hippocrates*, in aſſerting, that this Woman was leucophlegmatic, and voided Worms at the Mouth, inſinuates that the firſt Paſſages, and indeed the whole Body, were ſtuffed with groſs Juices.

It is upon theſe Accounts that Nurſes are ſubject to Weakneſs of the Eyes, Head-achs, a Giddineſs in the Head, a Difficulty of Breathing, and the *Fluor Albus*, eſpecially if they ſuckle for ſeveral Years. *Ballonius*, * the moſt experienced Phyſician of his Time, obſerves, that all the Women, who had been Nurſes for a long Time, grew very lean, or were afterwards apt to be ſickly, or ſubject to the *Fluor Albus*, or laboured under a Weakneſs: For in ſuch Women the Humours are eaſily colliquated and the Parts which receive them give a ready Acceſs; as it happened to a certain old Woman, ſays *Ballonius*, who had ſo much Milk, that ſhe ſuckled three Children for a long Time, the Conſequence of which was the emptying of the Veſſels, and an habitual Infirmity. The ſame Author † relates the Caſe of a Nurſe, from which we may gather a Caution of no ſmall Importance relating to the right Cure of Nurſes. *A certain Woman*, ſays he, *had ſuch a Defluction upon the Spine, that ſhe was almoſt quite ſtiff. She was a Nurſe, and perhaps the Fatigue of Suckling had occaſioned her Illneſs. She recovered upon the Application of Cotton and Oil without Bleeding, for the Heat of the Bed and the Inunction promoted a Concoction. Perhaps another Phyſician*

* Lib. 2. Epid. † Ibid.

ſician would have been for bleeding her. Thoſe Phyſicians, who impute the Diſeaſes of Nurſes to the Suppreſſion of the Menſes, are often for Bleeding; but they commit a great Error. Had that Woman been in the Hands of our modern Phyſicians, ſhe had been bled three or four times; for they look upon Bleeding as the chief Hinge of the Cure of the Diſorders of Nurſes, becauſe while they ſuckle they have no menſtrual Purgation. But they are mightily miſtaken; for it is not ſo much the Abſence of that Evacuation which we are to mind, as the Cacochymy, and the Diſorder of the Body contracted by long Suckling. Beſides, in this Country, there are few Nurſes who live in great Families, but feed high; which is a further Argument for our being cautious of Phlebotomy, for fear of weakening the Body more, and ſo adding Strength to the Diſeaſe. So that the ſafer Way of the two is to inſiſt upon Purgatives, rather than run the Riſque of unſeaſonable Bleeding.

All the World knows what Diſorders Nurſes undergo in their Breaſts, ſuch as Redundancy of Milk, the profuſe Running of it when it is thin, (which is followed by a Weakneſs and a conſuming Decay) the Curdling of the Milk, Inflammations and Abſceſſes in the Breaſts, and Chops in the Nipp'es: The Cauſes and Cure of all which I forbear to mention, this Subject being treated at large by practical Writers, and particularly by the learned *Etmuller*, who muſters up a long Train of Remedies * for that end,

Sometimes Nurſes complain of a painful Compreſſion in their Back, eſpecially ſuch of them as have been lately brought to bed, and have a great deal

* *Valet. Infant.*

deal of Milk, either from the Softness and Laxity of the Breasts, or from the Weakness of the Child, which is not able to empty them. This Pain is felt chiefly in the Back, by reason of the excessive Turgency or Distention of the lacteal thoracic Vessels, which climb over the *Spinal Marrow*, and convey the chylous Matter to the axillary Vessels, or else to the Breasts, in order to the Generation of Milk, this Distentation is to be remedied by a moderate Diet, and especially abstaining from strong Wine; and, if the Pain be violent, Bleeding will not be improper. This Pain, which is sometimes followed by a Fever, is chiefly observed among the lusty, hale Women.

Hysteric Disorders do also afflict Nurses, especially such of them as live in great Families, feed high, and are carefully withheld from their Husbands Embraces. For when the Nurse is high fed, the Womb swelling with Liquor assumes a Furiousness, and gives no small Taint to the milky Liquor in the Breasts. Almost all Authors lay down this for a Certainty, that Nurses ought to abstain from Coition, lest the Milk should be spoiled. The Woman who suckles, says *Galen*, † must abstain altogether from Venery, for Copulation brings down the Menses, and gives the Milk an unsavoury Taint. It would be tedious to quote the Authors who look upon this as a necessary Caution, though in reality it is neither countenanced by Reason, nor backed by Experience. I grant, indeed, that if a Nurse conceives, she gives but weak and vitious Nourishment; and that thereupon the Child must either be weaned or put out to another Nurse. *De Graaf* * has a curious and remarkable Story of a Man, who had a little fat Bitch which suckled a Cat, notwithstanding that she had

† *In p. de Tu. Val.* c. 9. * *De Vir. Organ.*

had never been with Pup, which he kept up from the Dog, when she grew proud; but by chance she lighted on a Dog by stealth, and from that Time forth the Cat would not suck her Milk. So that I dare not deny, but that repeated and immoderate Venery will taint the Milk. But at the same Time I do not know, but the Milk may be more vitiated by keeping up the Nurses from the Fellowship of their Husbands, which whets their Appetite and tosses their Mind in awkward longing Night and Day, and so throws them into violent hysteric Fits: And thus it is, that nice People, who watch their Children's Nurses more narrowly than their own Wives, are only revenged upon the innocent Children.

Authors may write what they will, in compliance with *Galen*'s Dictates, and confine the Nurses in a Prison, where the Society of Men is not allowed: But for my Part, I am of another Mind; and, in Justification of my Thoughts (as the Orator † said) *ad Populum provoco*, I appeal to the People: For I observe that among the common People, all the Mothers suckle their own Children, (unless some Accident prevents them) and lie every Night with their Husbands, whose Embraces they receive after the usual manner, without incurring the Inconveniences with reference to their Milk, which Physicians are so much afraid of, when they condemn the Nurses of great Men's Children to a rigorous Chastity. In this City there are but few of the Nobility or Gentry who entertain their Nurses in their own Houses; for, upon high Feeding, their Lasciviousness and Petulancy are unsufferable; and therefore the Children of Persons of Quality are commonly put out to Nurses who entertain them at Home with their own Family; nay the Country Nurses are preferred

† Lib. 7. Ep. 17.

red to thoſe who live in Town, becauſe their Milk is preſumed to be heartier and ſtronger.

The only Author, I know of who rejects the vulgar Error of tying up the Nurſes from their Husband's Embraces, is *Martianus*, * who, after ſhewing how the Milk is generated, ſpeaks to this Purpoſe. *If theſe Things be true, thoſe Authors muſt be miſtaken who prohibit Nurſes to keep company with Men, as if that would vitiate the Milk; for Copulation raiſes a certain Motion in the Womb, upon which depends the Breeding of the Milk, and adds Alacrity to the Woman, by virtue of which the little Veins are relaxed, as* Hippocrates *ſays; all which contribute very much to the Plenty and Goodneſs of the Milk. Beſides, ſince Continence is ſo offenſive to thoſe who are accuſtomed to Venery, that it makes them ſubject to various Diſeaſes, it can be no ſafe Courſe to deprive Nurſes altogether of their Huſbands Company.* Beſides, if we weigh the Caſe maturely, we ſhall find, that the Milk owes its firſt *Origin* to the Womb: For, while the Womb is moved and tranſported with venereal Pleaſure, the whole Centexture of the Body is likewiſe moved, and the Blood-veſſels become larger. And now, that I have mentioned the Dilatation of the Blood-veſſels, it puts me in mind of a Cuſtom obſerved by the Antients in ſolemnizing Matrimony. When the Bride went firſt to bed, the Nurſe took the Meaſure of her Neck with a Thread, and next Morning ſhe meaſured it again with the ſame Thread; and if the Thread proved too ſhort in the Morning, ſhe joyfully proclaimed, that the Bridegroom had made a Virgin a Woman. To this Cuſtom *Martial* alludes when he ſays,

Non

* *De Nut. Pu. Ver.* 250.

Non illam Nutrix orienti luce revisens,
Hesterno collum poterit circumdare filo :

That is to say, the Bride's Neck grew bigger, and her Veins swelled upon the Exercise of Venery.

I have oftentimes bent my Thoughts upon the mechanical Contrivance of Nature, by which Milk is bred in the Breasts as soon as the *Fœtus* is brought forth, and even before, as if it were contrived by some intellectual Being, who makes provision before-hand to answer the Necessities of the Infant. But I cannot yet form to myself any satisfactory Idea of the Matter, neither do I receive any Satisfaction from those who have treated on this Point ; such as *Diemerbroeck*, *Gasparus*, *Bartholine*, and others quoted by *Diemerbroeck* *. For which Reason I shall venture to make a small Digression upon this Subject.

The Discovery of the Lacteals, begun in this fortunate Age by *Asellius*, and brought to Perfection by *Pecquetus*, though *Hippocrates* † seems to have hinted at it, is universally known ; there being no Retainer to Physic, who is unacquainted with the Motion of the Chyle through its proper Ducts, and its Ingress into the Blood-vessels, or with the Opinion of the Ancients and Moderns, relating to the constituent Matter of Milk, which they will needs derive from the Chyle, taking Milk to be a Part of the Chyle mixed with the Blood and strained out in the Breasts. This Opinion they back with Conjectures not destitute of Probability, which were first conceived by *Martianus* ‖, that excellent Commentator upon *Hippocrates*

* L. 2. c. 2. *Anat. Diss. de Mamm.* † *De Gland.* *nu.* 3. ‖ *Com. Hip. de Nat. Pueri.*

crates. Theſe Things, which in antient Times were propoſed only as Doubts, concerning the Subſtance of Milk, are now plain and unqueſtioned Truths. But we are ſtill at a loſs to fix upon the mechanic Means by which the Chyle is forced ſo plentifully into the Glandules of the Breaſts, both before and after Child-birth, notwithſtanding the Child-bed Purgation; for it is evident, that the Chyle does not move naturally that Way, and we cannot be ſo ſenſeleſs as to aſcribe its Motion either to an imaginary attractive Force, or to the Direction of an intelligent Faculty.

Since the Comments of the Moderns cannot ſatisfy us upon this Head, let us now conſult the Oracles of the Ancients, and try if they advance any Thing which bears a Reſemblance to Truth: For, as *Plautus* † ſays, the old Fables are infinitely preferable to the new.

Though the great *Hippocrates* ſometimes made uſe of the word *Nature*, in explaining the wonderful Things performed within our Bodies, yet he manifeſtly acknowledges that mechanical Neceſſity, which is ſo much in vogue among the modern Writers, who, diſcarding all Ferments, bring all to the Teſt of Mechaniſm, and an artful Structure. That *Hippocrates* had this mechanical Neceſſity in view is apparent from ſeveral Paſſages of his Writings. In one Place he ſays, * *Women have an eaſy Delivery, when, after the Breaking of the Coats or Coverings, the* Fœtus *tends and ſways towards its Head; for when the greateſt Sway tends towards the Feet, it preſents itſelf obliquely*; the Greek Word ὄγκος ‖ being well interpreted *Momentum* and *Inclinatio.* The mechanical Production of Milk he

† *Prolog. Caſin.* * Epid. *de Nat. Puer. n.* 21, *and* 42.
‖ *De Licet.* nu. 5

he explains after this Manner; *The Womb, swelling with the Bulk of the* Fœtus, *bears upon the Woman's Belly; and the Belly being full, when it is preſſed or ſqueezed, the fatteſt Part of the Food flies out into the Caul and the Fleſh.* This, ſays the venerable Author, is the Neceſſity or neceſſary Cauſe which gives riſe to Milk, in which Words he points to the mechanical Solution of the *Phænomenon.*

When a Woman therefore is with-child, as ſoon as the *Fœtus* begins to be bulky it bears upon the Womb, the Inteſtines, the Ventricle, the Diaphragm, and all the upper Parts, and ſqueezes them into a narrower Compaſs, at the ſame time it drives the Chyle through the lacteal Veſſels of the *Abdomen*, and the thoracic Ducts towards the Breaſts; the ſoft and looſe Texture of which gives it a ready Admiſſion either through the *Ductus Chyliferi*, or, if theſe are not yet open, through the *Anteriæ Mammariæ*, as *Lower* and *Dionis* will have it. This Motion of the Chyle to the Breaſts needs no other impellent Force but the Compreſſion made by the Bulk of the *Fœtus*, which may be backed by the Motion of the *Fœtus*, as *Hippocrates* ſays †: For the firſt Signs of Milk appear in the Breaſts, as ſoon as the *Fœtus* begins to move in the Womb. Purſuant to this Notion the famous *Pecquetus*, the firſt Diſcoverer of the thoracic Chyle-veſſels, was of Opinion, that the Motion of the *Diaphragm* puſhed the Chyle from the Lacteals of the *Abdomen* to thoſe of the Breaſt; and from thence to the Maſs of Blood. *Herodotus* * has a very curious and remarkable Obſervation of the Means uſed by the *Scythians* to obtain greater Quantities of Mare's Milk, upon which they live. *They take*, ſays he, *hollow Bones like Pipes or Whiſtles, and fixing them*

† *P. de Mo. Mul.* nu. 97. * Lib. 4. *in Mel. Pom.*

in the Mare's Genitals, blow through them with their Mouths, while the Mare is a milking. This Contrivance they uſe upon the Apprehenſion that it ſwells the Mare's Veins, and makes the Udder fall down. Though the Womb of a Woman is not ſituate ſo near the Breaſts as in the Brutes which have their Faces pointed to the Ground; yet, when it is diſtended by the *Fœtus* grown to a conſiderable Bulk, it has Force enough to ſqueeze the adjacent Parts, and drive upwards the Juice contained in the Veſſels; eſpecially if we conſider, that the Motion of the *Fœtus* in the Womb joins Forces for that End with the above-mentioned Preſſure.

Now, after Delivery, the Womb returns to its natural Magnitude, and ſo this Preſſure and forwarding Motion ceaſes; for which Reaſon *Hippocrates* † adds, *That the Milk repairs to the Breaſts, provided the Woman ſuckles; for the Sucking of the Breaſts inlarges the Capacity of the Veins, and theſe being thus dilated draw the Fat from the Belly, and diſtribute it through the Breaſts.* So that the Child's Sucking is ſufficient to continue the Motion of the Chyle; but without that Suction the Springs will ſpeedily dry up. This Preſſure of the diſtended Womb diſcovered by *Hippocrates*, is countenanced by a Remark made upon the Animals, which bring forth ſeveral *Fœtus's* at one Birth, and have a long Row of Dugs on each ſide, ſuch as Swine, Dogs, and Cats, that the Dugs which lie neareſt the *Cornua* of the Womb, where the greateſt Preſſure is, are fulleſt of Milk both before and after Littering; which I have ſeen myſelf oftener than once, and for that Reaſon the Puppies which happen to ſuck

† *De Nat. Puer.* n. 22.

ſuck the middling Teats are ſtronger and fatter than thoſe which ſuck at the two Ends.

Thus we ſee *Hippocrates* endeavoured to explain the Motion of the Humour which becomes Milk, after a mechanical Way; and had his Succeſſors followed his Example, Medicine had long before now been raiſed to a higher Degree of Perfection in many Points: But, inſtead of that, they pretended to ſolve all difficult Queſtions by having recourſe to the Word *Nature*; the moſt inſignificant Word which ever crept into phyſical Diſputes, and the greateſt Patron of Ignorance, *Diemerbroeck*, * dwells long upon the Queſtion, What it is which drives the Chyle through its Ducts to the Heart, or forces it to the Breaſts, in order to become Milk? Having rejected the Opinion of *Deuſingius*, who took it to be a certain Quality which rarifies and ferments all Things in the Body, he endeavours to eſtabliſh his own, but upon very ſlender Grounds; for he imputes all the Motion, we now ſpeak of, to a ſtrong Imagination in the pregnant Woman, while ſhe thinks intently of the Generation of Milk for the Nouriſhment of the Child: Which Opinion is learnedly refuted by *Bartholine*†. Beſides, this imaginary Whim will quickly fall, if we but conſider that Ladies of Quality, who refuſe to ſuckle their own Children, for fear of making their Breaſts flaggy, have, nevertheleſs, Milk in their Breaſts. And they are ſo far from thinking with Concern, or wiſhing for Milk in their Breaſts, that all their Thoughts center in the avoiding of it: And yet, in ſpite of their Wiſhes, in ſpite of all the Remedies they uſe to the contrary, their Breaſts are viſited with Milk the third or fourth Day after Delivery. However,

* Lib. 2. *Annot.* c. 2. † Diſſ. *de Mam. & Lact.*

Bartholine himſelf has no firm or ſatisfactory Poſition upon this Head; for all his Advances are propoſed in a dubious Way. In the firſt Place, among the external Cauſes which diſpoſe the Breaſts to Lactification, he reckons the ſudden Change which is obſerved in Virgins when the Terms begin to flow, the Privities are covered with Hair, the Voice changes, the Breaſts begin to be round and plump; then he brings in the Male-ſeed, which in Conception puts the Maſs of Blood in a Ferment, and diſpoſes the Chyle to a readier Seceſſion in the Breaſts. The internal Cauſes which make the Breaſts turgid, three or four Days after Childbirth, he imputes to the Reflux of the chylous Blood, which uſed to repair in great Plenty to th Womb, for the Nouriſhment of the *Fœtus*. *Ortlob* * runs much upon the ſame Strain, alledging, that the Womb, being contracted upon the Egreſs of the *Fœtus*, the Matter allotted for its Nouriſhment is ſucked up again by the Blood; and ſo the Glandules of the Breaſts, being diſtended more than ordinary, undertake the Secretion of the Humour which was formerly performed in the Womb. Theſe Conjectures are truly very ingenuous; and indeed it is manifeſt, that the Milk owes its Origin to the Womb; for, without Conception, Milk is never, or at leaſt very ſeldom, ſeen in the Breaſts. But ſtill the Queſtion recurs, How, upon the Diſburdening of the Womb, comes the chylous Blood, which uſed to be carried through the hypogaſtric Arteries for the Nouriſhment of the *Fœtus*, and is now ſucked up by the Veins, and mixed with the arterious Blood in the left Ventricle of the Heart, to direct its Courſe to the Breaſts, and there acquire the Form of Milk, and that, not when the Woman

* *Hiſt. Par.* Diſſ. 14.

Woman is lusty and full of Juice, but when she is brought low and exhausted with the previous Fatigue of having a Child in her Belly, and of a laborious Child-birth, and with the present Evacuation from the Womb, which is certainly very considerable? So that the Question is still to be put, What impellent Force, what mechanical Spring, pushes the Matter of the Milk into the Breasts? And of this, I believe, we are altogether ignorant.

Certainly we must believe, that the Divine Architect has formed the Womb and the Breasts of such a Structure, and by such an unknown though admirable Artifice, that, by a constant Law, the Disburdening of the Womb is followed by Milk in the Breasts; just as we see the Lungs of the new-born *Fœtus*, which for nine Months had not been used, do then begin to perform their Office, the external Air entering at the Mouth, and blowing them up by its elastic Force, that so at the same time the *Foramen Ovale* may be disused, and the Blood circulate in a new Channel. I cannot deny, but there is a wonderful Consent of Sympathy between the Breasts and the Womb; but the Ingenuity of Mankind, and all the Application of Anatomists, is not able to canvass it. This Consent was known to *Hippocrates*, who * said, *That if the Nipples of the Breasts are pale, the Womb is in Disorder.* *Bartholine* explains the Consent of the Womb and the *Placenta* with the Breasts, by the mutual Similitude of the glandulous Substances of the *Placenta* and the Breasts; so that the chylous Blood, which used to repare to the *Placenta*, falling in with the Breasts in the Course of Circulation, fixes there, as in a Place to which it is allied. But sometimes we meet with Milk in the Breasts of Virgins, and there we cannot but

* 6 Epid. Se. 5.

own a Sympathy between the Womb and the Breaſts, without the Intervention of a *Placenta*. Beſides, Experience atteſts, that where there is no *Placenta* or Impregnation, the redundant Humours of the Womb frequently occaſion cancrous Humours in the Breaſts: And theſe we meet with among Nuns oftener than among other Women, not from a Suppreſſion of the *Menſes*, but by reaſon of their living ſingle. For I have often ſeen well-complexioned Nuns who had their menſtrual Purgation duly, but were mighty laſcivious, die in Miſery of horrid Cancers in the Breaſts. And, for as much as there is ſcarcely a City in *Italy* without ſeveral Nunneries, we ſeldom meet with a Monaſtery which has not freſh Inſtances of this Misfortune. How comes it to paſs then, that the Breaſts, and not the other Parts, ſuffer ſo ſeverely for the Diſorders of the Womb? Aſſuredly there muſt be ſome occult Conſent which is not yet brought to light; though it may in Proceſs of Time, ſince Truth is not yet ingroſſed.

This wonderful Sympathy between the Womb and the Breaſts, the two Fountains of Luſt, is further to be ſeen in the handling or tickling of the Breaſts, which the Women own to be no ſmall Incitement to Venery. *Carpus* † obſerves, that the handling of the Breaſts, and eſpecially the Nipples, which have Erection like a Man's Yard, revives drooping Venery: His Words are to this Purpoſe; *The Handling of the Breaſts* * *invites to Venery, both in Men and Women, but eſpecially in Women; for there run Veins from the* Pudenda *to the Breaſts, inſomuch that, if you tickle the Nipple of the Breaſt, it ſuffers Erection like a Man's Yard.* We conclude therefore, That the Sympathy or Conſent between theſe Parts is entertained and kept up by the

* Com. 2. *in An. Mu.* p. 316.

the Veſſels, and not by the Similitude of Subſtance, as *Bartholine* would have it; for, in Effect, there is no Similitude of Subſtance, becauſe, when it is cleared of the *Lochia*, and reſtored to its natural Magnitude, it is all over membranous, and conſequently differs vaſtly from the Breaſts, the Texture of which is rather glandulous.

Upon the whole it appears, that the Reaſons aſſigned by the Moderns for the Turgidity of the Breaſts after Child-birth, and at no other Time, come far ſhort of *Hippocrates*'s Doctrine. For, though the venerable old Man was not appriſed of the Motion of the Blood and Chyle, yet he carefully remarked this wonderful Sympathy, and mutual Commerce between the Breaſts and the Womb, and gave a plauſible Scheme of the Production of Milk by the Preſſure and Motion of the *Fœtus* in the Womb; which whoever rejects ought to produce a better.

To leave off the Purſuit of a Secret which has been ſought after in vain by ſo many great Men, we now return to the Diſorders of Nurſes in queſt of ſome Relief for them in the Store-houſe of Phyſic. If the Diſorder be violent, let it be what it will, and if it takes riſe from over-ſuckling, let the Child be weaned, or put out to another, for the Removal of the occaſional or procatartic Cauſe is always the beſt Remedy. If you ſuſpect an imminent Conſumption, the Indications of which are an univerſal Thinneſs and Leanneſs gradually increaſing, Inappetency, want of Reſt, and a pale, wan Countenance, you muſt immediately give over ſuckling, and take ſuch Remedies as prevent a Conſumption, and nouriſh the Body. For which End conſult Dr. *Morton**, who deſcribes a Con-

* *Phthiſiol.* c. 6.

ſumption occaſioned by over-ſuckling, and propoſes various Remedies calculated for that Caſe. In a word, the principal Relief in ſuch Caſes is had from Aſſes or Cows Milk, provided an acute Fever, an exceſſive Sharpneſs in the Stomach, and ſuch other Symptoms do not render it improper. For it is agreeable to Reaſon, that, if the Conſumption of the Body was occaſioned by a Loſs of Milk, the Reparation would come by Milk again. Aſſes Milk is moſt proper in the beginning to carry off the vitious Humours, after which Cows Milk will ſerve to repair the decayed Body: For this is the true Method of exhibiting Milk in a Conſumption, and was obſerved by the divine *Hippocrates* * in his Hiſtory of *Eratolaus*'s Son, who was reduced to the laſt Extremity by a long and violent Dyſentery, and to whom he firſt exhibited Aſſes-milk to purge him, and then Cows-milk to nouriſh him. *He drank*, ſays *Hippocrates*, *nine* Attic Heminæ *of Aſſes-milk boiled, for two Days; upon which enſued a violent bilious Purgation, with a Ceſſation of Pain, and the Return of his Appetite. After that, he drank at one Draught four* Attic Heminæ *of Cows-milk crude, two Cup-fulls at a Time, adding to it the firſt Day a ſixth Part of Water, and a little harſh black Wine. Martianus*, in his Notes upon this Place, adds, *It is well known that Aſſes-milk, which the Moderns prefer in a Conſumption, is not given to recruit and repair the Body, Cows-milk being only proper for that End, by virtue of its Conſiſtence.* In fine, a Milk-diet managed as above will do the Buſineſs effectually; for it will firſt clear the Body of the Redundance of Humours, and then repair it. Dr. *Morton* relates the Caſe of a Woman, who, after four Months

* 7 Epid. n. 3. *de Nat. Mul.* n. 16.

Months Suckling, was seized with a great Weakness, Inappetency and hysteric Passions, but would not comply with his Advice in giving over Suckling, and betaking herself to a Milk-diet; upon which she fell into a Consumption of the Lungs with a Cough, a Difficulty of Breathing, and a hectic Fever.

But if the hysteric Passions proceed from an excessive Plethora, as it happens to the Nurses of Great-men and Princes, then we must attempt some Evacuation, and particularly Phlebotomy, in order to ease and empty the Vessels: At the same time we ought to injoin a strict Regimen, and administer the other Remedies usual in hysteric Cases, of which we have great Variety in practical Authors. But often the hysteric Disorders of this Sort of Nurses are produced by this, that, being fed high, they abound with uterine Juice; or, to speak with the Moderns, their *Ovarium* is turgid, and the Fallopian *Tube* sounds a Call to Venery; in which Case they must either be dismissed from Nursing, or allowed in some measure to keep Company with their Husbands, for fear of a *Furor Uterinus*, which is highly pernicious to the Child. Now as Physicians must be very circumspect and vigilant in tracing and discovering this Case; for sometimes they conceal their lascivious Desires, and keep them boiling within their Breast for fear of being discarded, and sent Home to their poor Habitations, so that they are not seized with manifest hysteric Fits: But the hidden Passion betrays itself several Ways; as if they are not so chearful as formerly, if they are more pensive and less talkative than usually, if they chear up and frisk about when they meet or converse with a handsome Man: If these Signs appear, we may safely conclude that the venereal Sport runs in

their

their Minds, which puts the whole Body into ſuch a Ferment, that it ſtamps indelible Characteriſtics upon the Child, as it has been obſerved, ſays *Helmont*,* that a laſcivious Nurſe has transferred the like Temper to the Children who ſucked her.

I intimated above, that often the jolly and well-complexioned Nurſes, who have great Plenty of Milk, uſe to complain of a painful Preſſure in their Shoulders, which proceeds from too full a Stream of the lacteal Juice, paſſing through the thoracic Ducts to the ſubclavian Vein and the Breaſts: In which Caſe they ought to obſerve a ſpare Diet, and abſtain from ſuch Things as are apt to enlarge the Quantity of their Milk. That this Diſorder was known to *Hippocrates* is plain from that Paſſage, where, ſpeaking of pregnant Women, he ſays, *Meat and Drink puffs up the Shoulders:* And *Martianus*, commenting upon the Place, derives the Matter of the Milk from the Stomach, that being the chief Spring of the Body, which gives and receives from all Corners, and calls in the Teſtimony of the Nurſes themſelves, who, as ſoon as they have eat or drank, perceive a Humour deſcending from the Shoulders by the Clavicles to the Breaſts; and this they are moſt ſenſible of when the Child ſucks; whence it comes to paſs, that nothing takes off a Woman's Milk ſo effectually as the Application of Cupping-glaſſes to the Back; and for that Reaſon ſcarcely any Nurſes care for that Remedy.

As for the cuticular Eruptions which Nurſes are afflicted with, it is a hard Matter to avoid them, while they carry in their Arms and ſuckle Children, who have commonly a Cruſta Lactea upon their Heads.

* *De Infant. Nutrit.*

Heads. The Remedies for this Diſorder ought to be chiefly external without inſiſting upon Purgation, and a thouſand other internal Means commonly uſed in cutaneous Diſorders. Let the Ointments calculated againſt the Itch be applied, even when the Body is unpurged; for the Diſorder proceeds not from a vitious Collection of Humours in the Body, but from the Contact and perpetual Handling of the Children, ſo that we have nothing to fear from extinguiſhing out of hand the ſcabby *Miaſmata* which ſtick in the Skin. Indeed, if the Itch or Scab take riſe from a Cacochymy, occaſioned by long Suckling, we muſt take another Courſe: For then the peccant Humours muſt be purged off, before the Application of the external Topics. But I have known a great many Nurſes perfectly cured without any Remedies, in a few Months after they gave over Suckling; and that of a very foul Scab which was only catched by continually handling ſcabby Children. Nurſes ought therefore to be very cautious in handling the Children they ſuckle, and endeavour as much as poſſible to keep both themſelves and the Children clean and ſweet; for if that Caution were duly obſerved, Children would not be ſo liable to foul ulcerous Eruptions, as they commonly are; neither would they waſte and pine away ſo often in perpetual crying and yelling. *Galen* * has a Story of a Child who had cried all day, and would not be appeaſed neither by the Breaſt, nor Dandling, nor any other uſual Way; till by *Galen*'s Orders the Child's Linnen was ſhifted, and itſelf waſhed in a ſweet Bath, upon which it was ſtill and ſlept a long while.

Before

* 2 *De San. Tu.* c. 8.

Before I take leave of the Nurſes, I have one Caution of ſome Importance to lay before them, for the Regimen both of themſelves and the Children; which is, that they ought not to ſuckle their Children ſo often as they uſually do, nor ſet them to the Breaſt as often as they cry. Moſt Nurſes are very faulty in this reſpect; for they will give Children the Breaſt a hundred times a Day, and oftener in the Night-time to be free of their Noiſe: By which means they exhauſt themſelves, and ſtuff up the Child with too much Milk, and ſo both one and the other are miſerably ſick. For how can the tender little Stomach of the Child digeſt ſuch a Quantity of Milk, without giving riſe to Crudities, ſour Humours, Coagulations, and frequent Vomitings? And how can the Nurſe's Body do otherwiſe than waſte upon continual Suckling? Aſſuredly our ruſtic Women breed up their Children with more Caution; they ſuckle them only three or four times a Day, and ſo go about their Buſineſs, leaving them to cry as long as they will; in which Point they ſay they obſerve the Example of ſucking Calves, which are allowed to ſuck the Cow only thrice every Day. This Abuſe, of giving Children ſuck ſo frequently, gave riſe perhaps to the Cuſtom which now obtains in *England* and *Germany*, of nouriſhing the Children with Pap made of Cow's Milk, Yolks of Eggs, and Sugar; by which Method the Regimen of Children is more eaſily laid down, and their due Meaſure of Aliment is adjuſted by the Senſes. See upon this Subject the admirable Inſtructions of *Helmont*, *Etmuller*, and other Writers.

CHAP.

CHAP. XXI.

Of the Diſeaſes incident to VINTNERS *and* BREWERS.

HAVING thus taken a ſufficient View of the Milk-liquor, which firſt nouriſheth us, we come now to conſider that Liquor which adds Life and Spirit to ſocial Extertainments; I intend to ſtep into the Cellars and Ware-houſes, in which the Vintners prepare the Wines, and diſtil Brandy in the Autumn, and to examine the Diſorders to which theſe Workmen are obnoxious. I do not deſign in this Place to touch upon that Kind of Drunkenneſs which proceeds from the Drinking much Wine, but upon that which flows from the Smell and Spirits of the Wine, diſperſed through the Air, and conveyed along with it through the Mouth and Noſtrils: For the Servants employed in this Work, though otherwiſe ever ſo ſober, do often undergo all the Symptoms and Inconveniencies of Drunkenneſs, meerly from their being conſtantly employed in pouring out Wine, and taking the Grapes out of the Preſſes.

The Country of *Modena* affords a very pleaſant Proſpect in the autumnal Seaſon, of large Work-houſes, huge Preſſes, and long Rows of Caſks, with Laboratories, in which Wine is diſtilled: For Wine and Brandy afford the chiefeſt Branch of the public Revenue, eſpecially in that Part of the Country which lies between the *Secchia* and the *Panare*, which produces greater Plenty of Brandy, than any Part of the Ground on either Side of the *Po*, and exports every Year thouſands of great Caſks of

of Brandy to *Venice*, *Milan*, and other Towns. Now it being known by Experience, that a great deal of Brandy is drawn from the Grapes themſelves, the Vintners therefore keep the Grapes long preſſed in the Preſſes with great Weights of Beams upon them, and ſuffer them to undergo an Ebullition along with the Wine, and a Fermentation for ſome Months; nay, even for a whole Winter: After which they put the Grapes, with ſome Part of the Wine, into large Copper-veſſels, and ſo make a Diſtillation. In former Times they uſed to ſqueeze out in the Preſs all the Juice which was in the Grapes; but having ſince obſerved, that Diſtillation, though a laborious Work, draws much more Brandy out of the Grapes, they have quite laid aſide the Uſe of Preſſes in their Brandy-Laboratories.

Now the Servants who aſſiſt at the Diſtillation, and after it is over take the reeking Grapes out of the Copper-veſſels, and put in freſh ones, and caſk-up the Brandy, almoſt all of them get drunk in thus performing their Office. It is true, this Service is not performed in cloſe ſubterraneous Places, but in large open Portico's; but ſtill there is ſuch a Diffuſion of the volatile Parts of the Brandy, that, if a Stranger ſets his Foot in the Place, the Sharpneſs of the Smell proves too ſtrong for him in a little time. Nay, the Hens and other Houſe-poultry, the Hogs and other Animals, bred up in thoſe Places, become drunk by feeding upon the hot Grapes, taken out of the Stills. In a word, thoſe who do this Sort of Work for ſeveral Months together, and ſpend moſt of the Winter in ſuch Laboratories, grow lethargic, meagre, dejected, and vertiginous, with little or no Appetite.

In order to fix the true Cauſe of Drunkenneſs, it will be worth the while to enquire, Whether the

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inebriating Virtue of the Wine lies in its acid, or its alkaline, its fixing or its fusing Faculty? This Question is learnedly discussed by *Etmuller*†, who recounts the various Opinions of Authors, and brings in the Arguments on all hands; but in his own Opinion confutes the Reasons of *Tachenius*, *Bekius*, and others, who charge the acid Faculty of the Wine with the inebriating Virtue, and lay the whole Blame on the alkaline and sulphureous Parts.

I had once a Conference upon this Subject with a very learned Chemist, who offered a great many weighty Reasons, to prove that the whole inebriating Faculty lies in a volatile Acid, which is predominant in the Wine, and by virtue of which it passes from Stum to Wine. The Arguments he offered to make out this predominant Acidity were briefly these. 1. That curious Experiment of *Van Helmont*'s *, by which Spirit of Sal Almoniac does almost in a Minute of Time turn Spirit of Wine into a white Curd, which is so much the thicker, as the Spirit of Wine is purer. 2. The Effervescence observed in hot Blood upon the Affusion of the Spirit of Wine, in the same Manner, as if the Spirit of Vitriol had been poured upon it. 3. The precipitating Virtue of the Spirit of Sal Almoniac upon the Tinctures of Myrrh, Castor, and others prepared with the Spirit of Wine: Which indicates that the volatile Acid of the Wine falls upon the loaded alkaline Spirit, and precipitates the Body held in Dissolution. 4. The Enervation of generous Wine by absorbent Alkalines, such as Sulphur, Crabs-eyes and Egg-shells; insomuch that it will not afterwards attack Steel, and upon Distillation yields only a weak Spirit in small Quan-

† *Diss. de Temul.* * *De Aur. Vital.*

Quantity. 5. The Extraction of an ardent and inflammable Spirit from Vinegar, atteſted by chemical Operations. 6. The alkaline Nature of the Remedies which either prevent or cure Drunkenneſs; ſuch as Muſtard-ſeed taken faſting and vulgarly uſed on ſuch Occaſions; the roaſted Lungs of Cattle according to *Pliny*†, Garlic is recommended by *Hippocrates* ‡ to ſuch as either are drunk or are about to drink hard; and in fine all the Remedies, uſually adminiſtered to drunken Perſons, which being plainly full of alkaline Parts, would be ſo far from removing Drunkenneſs, or its Cauſe, that they would rather ſerve to fortify it, if the inebriating Power of the Wine lay in its ſulphureous and alkaline Parts. Such were this learned Man's Arguments for the acid Quality of Wine, to which I ſhall now add a Counter-balance of Arguments on the oppoſite Side, and then give ſatisfactory Replies to the former.

That the inebriating Power of the Wine lies in the ſulphureous and alkaline Parts is manifeſt from theſe Reaſons. 1. The Inflammability of Spirit of Wine; for it is plain, that Quality cannot be aſcribed to any Spirit which is manifeſtly acid, ſuch as Spirit of Vitriol, Nitre and Tartar; nay, ſuch Spirits are apt rather to deſtroy Inflammability, as appears from Gun-powder, which, after being ſprinkled with Spirit of Vitriol and dried, does not take Fire; whereas the wetting of the Powder with the Spirit of Wine does not produce that Inconveniency. 2. The Uſe of Wine and Spirit of Wine in Ulcers and Gangrenes, for controuling the luxuriant and corroſive Acids which feed the Ulcers. Were Spirit of Wine an Acid, it would be of pernicious Conſequence in ſuch Caſes. 3. The con-

† *H. N.* l. 3. c. 14. ‡ *De Vic. Acut.* n. 59.

constant and unquestioned Observation, that Spirit of Wine never degenerates to Vinegar, but only palls and grows weaker through Age, for Wine becomes acid rather through the Loss, than through the Depression, of the spirituous Part. To the same Purpose is another familiar Observation; that when Wine begins to be sour it affords but very little Spirit; whereas the palled and musty Wines yield a considerable Quantity; and for this Reason, those who distil Brandy for public Sale, use to buy up the decayed Wines, in order to draw the Spirit from them; but they never meddle with sour Wines, it being beyond the Power of Art to draw any Thing from them, but an insipid Phlegm, and then a sharp Liquor. 4. The Dulcification of acid and mineral Spirits, such as those of Vitriol and Nitre, performed with Spirit of Wine; which, if it were acid, would never correct nor tame those acid Spirits; for any Thing rather corroborates than weakens what is like to itself*. 5. The remarkable Effervescence of Spirit of Wine with Spirit of Nitre; which indicates that the Nature of the former is opposite to that of the latter, which is manifestly acid. 6. The Rectification of Spirit of Wine without Distillation, by the repeated Infusion of Salt of Tartar, Lime, and Pot-ash; for if Spirit of Wine were an Acid, Salt of Tartar and Lime, which are the principal Alkalis, would not rectify and strengthen it, but would rather weaken it by absorbing the Acid. It is true, Salt of Tartar may be said to rectify Spirit of Wine by absorbing its Phlegm; but I see no Reason why it should not be supposed to absorb the Acid, if any such were in the Spirit, and to load itself with that rather than with the Phlegm. 7. The Aptness of Wines

* *Etmul. Pyr. Rat.* c. 10.

Wines ſtrained through a Bag, to turn ſour, eſpe
cially in Summer, which is not obſerved in othe
Wines, theſe being preſerved from Sourneſs b
their ſpirituous Particles. 8. The Obſervation
that generous Wines are leſs hurtful to gouty Pe
ſons than ſmall ſharp Wines, ſuch as *Rheniſh*-win
which *Sylvius* † condemns in arthritical Caſes, as b
ing poſſeſſed of little volatile Spirit: The ſame R
mark being made long before by *Crato*‡, wh
writes, that in the Gout a little *Hungarian* c
Malmſey-wine is much better than large Quant
ties of ſmall Wines. The ſame Thing is vouche
by *Helmont*, *Willis*‖, and other judicious Author
who abſolutely reject ſmall and acid Wines, as be
ing apt to inflame arthritic Pains by multiplying th
Acid.

As for the Objections ſtarted by Chemiſts, i
favour of an inebriating Acid in Wine, I anſwe
firſt, That the Experiment of the Coagulation an
Efferveſcence of Spirit of Wine with the Spirit c
Urine does not evince an Acidity in Spirit c
Wine; for many Alkalis undergo Efferveſcenc
upon a mutual Mixture; witneſs the famous *Jo*
Bohn's * Experiment of Salt of Tartar, mixt wit
Oil of Tartar, which is not owing to an occul
Acid imbibed by the Tartar in its Solution; ſo
the ſame Efferveſcence follows upon the mixing c
Water with Salt of Tartar. In fine, it is we
known that many Acids undergo an Efferveſcenc
among themſelves, as well as many Acids mixt wit
Alcalis; ſo that the Experiment of Spirit of Win
with Spirit of Urine cannot be laid down for a ge
neral Rule.

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† *Append. Prax. Med. Tra.* 8. n. 254. ‡ C. 2
Conſ. 27. ‖ *In Volup. Vivend. de Anim. brut.* p. 2
c. 14. * *De Aer. in Subl. Inſt.* c. 4.

As for the Ebullition, obſerved in new-drawn od upon its Mixture with Spirit of Wine, as ch as if it had been mixed with Spirit of Vitriol, s obſervable, that this Ebullition is various, and s not always anſwer the ſame Way, purſuant the various State of the Blood, which abounds ietimes with an Acid, ſometimes with an ali; ſo that, when we ſee the Ebullition y great, we may conjecture a Redundancy an Acid in the Blood. The Precipitation Tinctures made with Spirit of Wine, per-ned with the Spirit of Sal Almoniac, is of great Weight; for many Precipitations are ac-nplifhed by ſimple cold Water, as in the Prepa-ion of the Roſin of Jalap; ſo that, if Spirit of ine were an Acid, purſuant to the chemical le, that what is diſſolved by an Acid is precipi-ed by an Alkali, it would follow, that Water ſt be an Alkali; whereas it is well known to an inſipid Body, and ſo far from partaking of y Sort of Sharpneſs, that it corrects both an acid d alkaline Acrimony.

Neither is the Enervation of Wine by the Infu-n of Alkalis ſufficient to evince, that Wine ine-ates by its Acidity; for when various Bodies are xed together, they make a new Concrete of dif-ent Virtues. Thus we ſee Water enervates th Acids and Alkalis, and dilutes any ſort of rimony. The drawing of ſome Portion of ar-it Spirit from Vinegar, does not prove that Spi-to be an Acid; for there is no Body, whether d or alkaline, ſo very ſimple, as not to contain ts Boſom ſomething of a Force oppoſite to its n Nature.

As for the laſt Objection, taken from the alka-e Nature of the Remedies which prevent or cure unkenneſs, we muſt obſerve, that theſe reſpect the

the Cauſe of the Diſeaſe, rather than the Diſeaſ itſelf, by promoting a plentiful Evacuation of Se rum by the urinary Paſſage, and ſo facilitating th Solution of Drunkenneſs; from whence it follows that they muſt likewiſe have a perſervative Virtue; fo we learn from *Hippocrates*'s Oracle,* that *quæ fact tollunt, ante facta fieri prohibent.* Beſides, Acids and particularly Vinegar, are likewiſe good Remi dies againſt Drunkenneſs. *Etmuller* † recom mends, as a powerful Diſcuſſer of Drunkenneſs Vinegar applied to theHead, and a Fomentation o the Juice of Houſe-leek and Vinegar applied to th Teſticles.

Purſuant to this Doctrine, *Etmuller* and othe Authors impute the Cauſe of Drunkenneſs to volatile Alkali, or narcotic Sulphur in the Wine which retards the Motion of the Humours and Spi rits. They ground this Aſſertion upon the Trem blings, Stupidity, and ſleepy Diſorders which en ſue upon Drinking, after the ſame manner as upo the Taking of Opium. But it is to be doubted whether the Wine produces theſe Effects by a fix ing, conſtri cting Quality; or whether, conſider ing that no Subſtance is more ſpirituous than Wine and approaches nearer to the Nature of the Bloo and Spirits, it does not rather operate by the Hu mours, and unlocking the Orifices of the Arterie diſperſed through the Brain, and ſo overcharging the whole Syſtem of that Organ with Serum, a to ſoften and relax the Spring of the Nerves The ſame Conjecture may be made of Opium that it does not incraſſate and fix the Humours as it is commonly thought to do; but rather col liquates them by its volatile Alkali; a Proof o which may be gathered from its diaphoretic an diuretic Virtue. The Conſideration of this pu th

* 3 *in* 6. Epid. † *Vig. & Somn.* c. 8.

he learned *Willis* * to a ſtand; for he confeſſes e could not eaſily perceive theſe Qualities of fix- ıg and incraſſating the Blood, which ſome attri- ute to Opium. However the Matter is as to the xing or ſettling of Opium, which I am not now t leiſure to inſiſt upon, this I will venture to af- rm of Wine and Spirit of Wine, that, though ey cauſe almoſt the ſame Accidents with Opium, ich as Tremblings, Drowſineſs, profound Sleep, and peechleſsneſs, yet they operate after a different Man- er from the Opium; for, after the Uſe of Opium, we nd the Pulſe low and ſlow, the Face pale and ghaſtly, nd the Extremities cold; but, after Hard-drinking f Wine or Brandy, we find for the moſt part a ſtrong 'ulſe, a red Face, flaming Eyes, and ſwollen Veins; nd accordingly *Virgil* †, ſpeaking of the Drunken- eſs of *Selenus*, ſays,

Inflatum heſterno venas, ut ſemper, Iaccho.

Further, that the Spirit of Wine throws the Se- um, out of the Maſs of Blood upon the Brain, is lain from ocular Inſpection; for *Bonetus* ‖ affirms, hat, in diſſecting the Cranium of thoſe who died n Drink, the Brain was found covered with a great eal of whitiſh or milky Serum. This Fuſion of he Serum is further confirmed by the true So- ution of Drunkenneſs, in *Hippocrates*, * which onſiſts in a copious Evacuation of Serum by the rinary Paſſages; for, though ſpeedy Vomiting is of reat Service to leſſen the Diſorders of Drink, the rue Solution is by the way of Urine. So true :, is that Wine cures the very Indiſpoſition it auſes, to wit, by its Faculty of attenuating he Humours and promoting Urine. This ſeems o be hinted at by *Ariſtotle* †, who, upon the Queſ- tion,

Pha. Rat. L. 1. Se. 6. † E.c l. 6. ‖ *Sepul.* p. 1. *Se.* 13 *ob.* 87. * 5. *Aph.* 5. † *Se.* 3. *Pr.* 3 *and* 22.

tion, Why diluted Wine is more intoxicating than pure Wine? gives in this among other Reaſons, That Wine concocts itſelf as well as other Things. It is plain from *Hippocrates* ‖, that the Ancients found Drunkenneſs to be of ſome Uſe. *Mneſitheus* ‡, the *Athenian* Phyſician, in his Epiſtle of Hard-drinking in *Atheneus* and *Langius*, ſpeaks to this Purpoſe: "*Thoſe who ſwill down great Quantities of Wine ſuffer great Diſorders both in Body and Mind; but to be fuddled now and then ſerves, in my mind, to purge the Body and refreſh the Mind: For our ordinary Drinking makes a Collection of ſharp Humours in the Body, which upon Hard-drinking are moſt conveniently purged off by Wine.*" It is plain therefore from this very antient Author, that the *Lacedemonians* purged their Bodies by Wine and Vomiting, and exhilarated the Mind with a ſocial Cup.

I have oftentimes obſerved in the Autumn, when the Wine is continually a making and caſking-up, that the Servants employed in this Work void a great Quantity of Urine, inſomuch that they make Water a hundred times a Day, and their Urine is thin and limpid like Water. Now this I can impute to nothing elſe, but the plentiful Emanation of Spirits from the Wine, which enter the Body by the Organs of Reſpiration, and colliquate the Serum in the Maſs of Blood. Accordingly, I have found new Wine much more diuretic than old Wine, though never ſo generous; ſo that when I mean to remove a Redundancy of Serum by the Way of Urine, I poſitively prefer the new Wine to the old; only take care to have it ſtrained and cleared of its groſſer Parts.

To

‖ 3. *De Diæt* n. 22. ‡ Lib. 11. c. 10. L. 1. E. 30.

To return to the principal Scope of this Chapter; I am of Opinion, that in these Workmen the volatile Parts of the Wine, with which the Air is impregnated, affect and put into a Fermentation, first the Blood, and then the Animal Spirits; for every one knows, that Wine is much of the same Nature with the Blood? and to this Purpose the famous *Androcydes* in *Pliny* * when dissuading *Alexander the Great* from Intemperance, advised him always when he drank Wine, to call to mind that he drank the Blood of the Earth. It is by Virtue of the same Affinity, that the Animal Spirits are affected, there being so many of them generated by the perpetual Accesses of the Spirit of the Wine, that they cannot be lodg'd within the Precincts of of the Brain: Upon which ensues the Perturbation of the animal Oeconomy, not unlike the Republic of the Bees, which suffers Commotions when the Hive is overstocked. Hence proceed *Vertiges*, Stupidity, and Head-achs, just as in the Case of a Distention of the Vessels, with a great Plethora; and at last, the whole natural Oeconomy being perverted, there ensues a Leaness, a Prostration of Strength, and the other above mentioned Accidents, which are of a milder Form in those who are long accustomed to the Business, but very severe in such as are but lately come to it. *Zacutus Lusitanus* † relates the Case of one who going accidentally into a Wine-Cellar, was so struck with the Smell of the Wine, that he fell down and expired in a few Hours.

The same Accidents happen in those Countries, where they have Ale instead of Wine, as *Germany*, *England*, and all the Northern Countries. For, though Vines grow in these Countries yet the Grapes are for the most part not sufficiently ri-

I pened

* L. 14. H. N. c. 5. † *De Prin. Med. Hist.* L. 1. h. 6.

pened; and ſo they ſupply the Want of Wine, with a Liquor prepared with Hops, Barley and other Grain, of which they have great Plenty; and with this Liquor they get drunk as well as with Wine. That the Northern People in antient Times brewed ſuch Drink for their own Uſe, is plain from *Virgil*, who, ſpeaking of a Country that lies far North, ſays,

Hic noctem ludo ducunt, & pocula Læti
Fermento, atque acidis imitantur Vitea Sorbis.

I am informed by Authors, and other learned Men, that the Brewers of theſe Liquors are liable almoſt to the ſame Diſorders with our Vintners and Diſtillers of Wine: For this Sort of Drink is very intoxicating, and it affords an ardent Spirit which *Platerus* † aſcribes to the Hops, and ſo thoſe who prepare, brew, and caſk it up are uſually ſubject to Heads-achs, *Vertigoes* and Anxieties of the Breaſt, there is therefore great Affinity between Beer and Wine; for as Wine is known to undergo a conſiderable Alteration in the Spring, when the Vines flouriſh, by Virtue of the odorous Effluvia diſperſed through the Air, ſo the Beer works and ſuffers a Commotion when the Barley begins to flower: And, as the immoderate Uſe of Wine and its Spirit ſinks the Appetite, ſo does Beer, according to *Helmont*, ‖ who ſays, it breaks and enervates the Ferment of the Stomach. *Pliny* * is ſo amazed at the inebriating Faculty of Malt-liquors, that he ſays Vice and Debauchery have been ſo wonderfully ingenious as to find out a Way to make Water intoxicating.

To

* 3 *Georg.* † T. *Pra. Med.* c. 3. ‖ *De ſame Læſa.* * L. 14. N. H. c. 22.

To conclude, it is but reasonable that the Art of Physic should provide some Relief for the Preparers and Distillers of Wine; that being a Commodity of such Importance, not only for common Occasions of Life, but for the Preparation of the better and handsomer Sort of Remedies; insomuch that if the Chymical Laboratories had been deprived of the Spirit of Wine, Chymistry had never rose to the Reputation it is now possessed of. *Galen* † had some Apprehension of this Art of distilling and seperating the various Substances contained in Wine, the Knowledge of which he wished for so passionately, that he says he would undergo any manner of Danger, if he could but find out a Machine or Art for separating the contrary Parts of Wine as well as Milk. For my Part, when I have such Workmen under my Care, I advise them to abstain altogether from Wine, and particularly from Brandy, and Spirit of Wine, especially during the Season of this Work; to turn away their Faces as much as they can from the Steams which fly out of the Wine, to sprinkle their Faces now and then with cold Water, and to step sometimes out of the Work-houses to take the fresh Air. When they are so ill as to be confined to their Beds, we must prescribe such Remedies as are usual against Drunkenness, and the disorders which attend it; upon which Subject we may consult several Authors, but especially *Etmuller* ‖ such Remedies are Vinegar, Castor, and especially Spirit of Sal-ammoniack, for nothing corrects the Disorders arising from the Abuse of Wine, more effectually, than what partakes of a volatile, urinous Spirit.

† Lib. 1 *de Simpl. Med. fac.* c. 17. ‖ *De Ten Mul.*

Pliny reckons up a great many Things for preventing Drunkenneſs, which are commonly known; ſuch as bitter Almonds, Colewort, and all ſweet Things. To theſe the late Authors have added a great many more, and particularly *Platerus*, who bewailing the Cuſtom of the Country, which made Civility and Hoſpitality to conſiſt in drinking hard, gives a tedious Liſt of Remedies to prevent Drunkenneſs; ſuch as Wormwood, Rue, Milk, the Lungs of Animals roaſted, Poſcae, Vinegar, and Water, ſour Apples, and ſeveral compound Electuaries, Mixtures and other Preparations.

To ſuch Workmen, as by reaſon of their narrow Circumſtances, cannot procure ſuch coſtly Remedies, we muſt preſcribe the ſimpler Medicines, and ſuch as are more eaſily prepared, Colewort, the Virtue of which has been extolled for many Ages, both for preventing and curing Drunkenneſs; Radiſhes, and Water diluted with Vinegar, which *Platerus* calls the Antidote of Drunkenneſs.

CHAP. XXII.

Of the Diſeaſes of BAKERS *and* MILLERS.

Hippocrates * ſays, there are very many Arts and Callings, (*Phyſic may be reckoned one of the Number*) which are very uſeful and pleaſant to thoſe who ſtand in need of their Aſſiſtance, but occaſion a great deal of Trouble and Labour to thoſe who

* *De Flat.* n. 1.

who practiſe them. And ſuch ſurely is the Trade of Baking, for what is more uſeful and even neceſſary to Life than Bread? and what can be more inconvenient and troubleſome to Tradeſmen than the Baking of it? For in ſifting the Flower, in kneading it into Dough, and in baking that in the Oven, they are in all theſe Steps expoſed to infinite Fatigue and Toil, and ſo brought under the laſh of various Diſeaſes. Bakers are generally at work in the Night-time, whilſt others, having finiſhed the Task of the Day, are recruiting their Spirits with ſeaſonable Sleep; and then in the Day-time are ſhut up like Owls to take their Reſt: So that, in one and the ſame City, we have *Antipodes*, that is ſuch as follow contrary Ways of Living. *Martial* to inſinuate that the Night was far ſpent and Day approached, ſays,

Surgite, jam vendit pueris jentacula piſtor.

And indeed, when the Day dawns and the Citizens return to their daily Exerciſes, there is a Neceſſity of having Plenty of Bread ready at hand, or elſe their Bellies would riſe up in Sedition. Hiſtory affords us ſignal Inſtances of violent Commotions raiſed in great Cities by a Scarcity of Bread; and not long ago the Court of *Spain* was under violent Apprehenſions of a popular Inſurrection upon the ſame Account. Hence *Juvenal* * recommends *Bread* and the *Ludi Circenſes* (that is, Plenty of Proviſions and diverting Shews) as the moſt effectual Means to keep the People to their Duty.

In the firſt Place thoſe who boult the Flour and cleanſe it from the Bran, and are always ſhaking

* *Sat.* 10.

and turning the Sacks and Bags, cannot poſſibly ſo cover their Faces as to avoid the Inſpiration of the flying Particles of the Meal, together with the Air; and theſe being fremented with the ſalivary Juice, ſtuff up not only the Throat, but the Stomach and the Lungs, with a tough Paſte; by which Means they become liable to Coughs, Shortneſs of Breath, Hoarſneſs, and at laſt to Aſthma's; the Wind-pipe and the Paſſages in the Lungs being lined with a Cruſt which interrupts the Intercourſe of the Air. Further, the Particles of the Flour or Meal, which adhere to the Eyes, pinch them very much, and often occaſion a Bleareddneſs.

I freely own, I cannot think of any effectual preſervatory Caution for theſe Workmen. I approve of the Cuſtom they have of tying a linnen Swath round their Face, but that will not hinder the Atoms of the Flour to enter the Breaſt along with the Air. *Pignorius* * in his excellent Treatiſe *de Servis*, quotes the Authority of *Atheneus*, to prove that this Cuſtom is very antient; but it is plain they did not do it out of any preſervative Deſign, but to prevent the dropping of the Sweat off their Faces upon the Bread, or the tainting of the Bread with their Breath. In fine, all I can adviſe theſe Workmen to do, is to waſh their Throat frequently with Vinegar and Water, to take Oxymel often, to purge now and then, or, when they are preſſed with a Difficulty of Reſpiration, to take an Emetic, which will throw off the Matter, which clings to the Paſſages. I have known an Emetic cure ſome who were reduced to the laſt Extremity.

Next

* Lib. 2.

Next in Order, are thoſe who knead and work the Paſte with their Hands, and form it into Bread and Loaves. Theſe Men do their Work commonly in hot Places, eſpecially in Winter, to promote the Fermentation of the Bread; and ſo, having Occaſion, when their Work is over, to go from Places of extreme Heat to the open Air, are readily ſeized with a violent Conſtriction of the Pores of the Skin, which in Proceſs of Time gives Riſe to a dull Heavineſs, Hoarſneſs, and the Diſeaſes of the Breaſt, ſuch as *Pleuriſies* and *Peripneumonias*. Now theſe Diſeaſes are ſo common, that every one knows the Remedies calculated to cure them: But in curing them it is of no ſmall Uſe to know, and have a particular Regard to the occaſional Cauſe; and for that Reaſon, in the Caſe now before us, we muſt chiefly endeavour to retrieve the natural Perſpiration of the Body, by keeping the Patient in a warm Room, uſing Frictions with Oil, and exhibiting Diaphoretics inwardly. I have obſerved, with ſome Surpriſe, and that among this Sort of Men more than among Perſons of other Trades, that violent Pleuriſies have been terminated by a plentiful Eruption of Sweat, even in the Beginning of the Diſeaſe, without any manner of Spitting: And this, in my Opinion, comes to paſs, becauſe in ſuch Caſes the acute Fever, which is the primary Diſeaſe, accompanyed with a Pain in the Side, takes Riſe rather from the external Cauſe, which is the ſudden Stoppage of the Pores of the Skin, than from a faulty Collection of Humours; ſo that, when the Vents of the Skin are open, and Sweat breaks forth, the Fever and pleuritic Pain vaniſh at once; the Matter, which had been thrown in upon the Breaſt, being thus recalled to its wonted Paſſages.

So important is that Advice of *Hippocrates*, * *Devenire ad occaſionem & occaſionis initium*. To come to the Cauſe and the Beginning of the Cauſe.

Sometimes the Hands of the Bakers are ſwelled and pained: And indeed it is obſervable, that all of them have very large thick Hands, which is owing to the continual kneading of the Paſte, which ſqueeſes the nutritious Juice in great Abundance out of the Orifices of the Arteries; for the Juice remains there, its Return being prevented by the Stricture of the Fibres. So that Bakers quickly diſcover their Trade, when they ſhew their Hands, for no Tradeſmen have larger Hands than they. Exerciſe, as *Avicenna* ſays, inlarges a certain Member; and the Truth of that Saying is manifeſt in other Parts. To conclude, I would adviſe thoſe, whoſe Hands are ſwollen and pained, to waſh them in Lie, generous White-wine, and the like.

Of all the Retainers to the baking Trade, perhaps thoſe who only bake the Bread in the Ovens are leaſt expoſed to Injuries; for, though they ſuffer not a little from the exceſſive Heat in filling and drawing the Oven, eſpecially in Summer, while they are covered all over with Sweat, yet they are much refreſhed with the Smell of the hot Bread: For new Bread is a great Reſtorative, and exhilirates the Spirits with its very Smell, as *Wedelius* † remarks, *de Sale Volatili Plantarum*, and *Becherus* in his *Phyſica ſubterranea*, where he prefers the Smell of Bread to the comforting Virtue of Pearl.

I have obſerved, that the Bakers of large populous Cities, the Inhabitants of which chuſe rather to buy than to bake their own Bread, are oftner

* 4 in 2. Epid. † Cap. 4. L. 1.

oftner ſick than thoſe of ſmall Towns and Villages, where almoſt every Family bakes for itſelf, *Pliny** informs us, that, from the Building of *Rome* to 530 Years after, the *Romans* had no Bakers; but the *Quirites* themſelves had their own Bread made at Home, that being the Womens Province: But that afterwards, when the City grew populous, the Trade of Baking was brought in by the public Slaves. When ſuch Workmen therefore are ill, let their Diſeaſe be what it will, we muſt carefullly remember the Diſorders they are expoſed to in the Way of their Buſineſs.

I have choſe to throw the Millers or Grinders of Corn, into the ſame Liſt with the Bakers; for when the Corn is reduced to fine Flower, the Particles fly about and fill the whole Mill; ſo that, in ſpite of their Teeth, their Mouth, Noſtrils, Eyes, Ears, and indeed the whole Body is covered with Meal? the Conſequence of which is, that many of them become aſthmatic, and at laſt hydropic. They uſed likewiſe to be ſeized with Ruptures by the Breaking or Relaxation of the Peritonæum, in carrying Sacks of Corn or Meal upon their Shoulders; and, being obliged to lie Night and Day in the Noiſe of Water-falls, Wheels, and grinding Places, almoſt all of them are deafiſh; for the Drum of the Ear, being perpetually ſtruck with too ſtrong an Object, loſes its Tone and Spring.

It is worth obſerving, that both Millers and Bakers are generally troubled with Lice, inſomuch that the common People call Lice the Millers white Fleas, by Way of Banter. I am at a Loſs to determine, whether this proceeds from their being conſtantly covered with Dirt and Duſt, or from their Cuſtom of ſleeping with their Cloaths on, or from

* Lib. 14. *H. N.* c. 11.

the Mixture of the Flour or Meal, with the Excrements of the Skin, as being a fit Matter for the Generation of ſuch Animals: But it it is certain, that moſt Millers are in this Condition, which, if *Daniel Heinſius* had been aware of, he would certainly have made room for them in his admirable Oration, *de laudibus pediculi.*

Theſe Tradeſmen were ſubject to more violent Diſtempers in antient Times than they are now. For the Antients had not ſuch Machines for grinding Corn as we now have, by the Help of Waterfalls, which turn great Wheels about; though indeed *Palladius*, * an ancient Author, makes ſome Mention of the Grinding of Corn by the Force of Water. They uſed to grind their Corn in *Piſtrina*, which are now uſed for bruiſing and taking the Husks off Grain. Their Wheels were turned not only with Cattle, but with Men, and Slaves, and Women: And from thence roſe the Name of *Molæ truſatiles*, *Handmills*, becauſe they turned them rõund *(Trudebant)* with all their Force. Criminals were commonly condemned to this Work at the *Piſtrinum:* And we ſee in *Plautus*, there was nothing ſo frequent nor ſo ominous to Slaves, as the Word *Piſtrinum. L. Apuleius* ſays, he was made an Aſs, tyed to a Mill with his Face covered, and forced to tread over his own Footſteps. We read in ſacred Writ, that *Sampſon* had his Eyes put out by the *Philiſtines,* to qualify him for the Turning of a Mill (which was probably a Handmill) for they uſed to put out the Eyes of ſuch as were doom'd to this Service, to prevent their being giddy.

It is plain therefore, this was a very laborious Exerciſe, that both Men and Women were doomed

* Lib. 1. *t.* 42.

d to; and that it would quickly kill them, by ſubjecting them to diſmal Diſorders. * Hence *Job*, among other Imprecations, to compleat his Miſery, puts in this. *May my Wife grind to another*; that is, as *Vatablius* and other Interpreters take it, *let her become a mean Servant or Slave*; though indeed ſome take it in an obſcene Senſe; upon which Subject ſee *Pfeiferus* † in his Hebrew Antiquities. The *Romans* had likewiſe great Numbers of *Piſtrina*; nay, every Quarter or Ward of *Rome* had a determined Number allotted it; as *Victor* obſerves, *de Urbis Regionibus*. But now that Water-mills are ſo common every where, the *Piſtrina* are only uſed for bruiſing or ſplitting of Grain. And ſo, the Yoke of Slavery being likewiſe taken off by the Chriſtian Religion, the grinding Trade is not ſo hard and laborious, nor yet ſo apt to occaſion Diſtempers as in former Ages. Both Millers and Bakers require the ſame Method of Cure, when the Diſorder takes its Riſe from the volatile Flour ſucked in at the Mouth. If they are ſeized with Ruptures upon carrying heavy Burdens, let them wear Truſſes; and indeed I uſually adviſe them to wear Truſſes likewiſe by Way of Prevention.

As for the Louſineſs which afflicts them, they muſt take Care to keep themſelves very clean, and ſhift often; and waſh themſelves with the Decoction of Worm-wood, Peach-leaves, Centaury, Staves-acre, and Lupines. *Q. Serenus* recommends the Application of Bran mixed with Vinegar: But, above all, the effectual Remedy is Liniments containing Mercury, kill'd in Spittle. The Linnen, which Gold-ſmiths wipe their Plate with after Gilding, is likewiſe of good Uſe.

CHAP.

* C. 31. † *Cap.* 1. *de molend Hebr.*

CHAP. XXIII.

Of the Diſeaſes of STARCH-MAKERS.

THOSE employed about the making of Starch are likewiſe liable to uncommon Diſorders. Starch is ſo commonly uſed for the whitening of Linnen, that every old Woman knows how to make it. In this Country it is commonly made by the Nuns, who ſell it afterwards to the Apothecaries, and other Shops. They take, in the Summer-time, Wheat ſteeped in Water till it is rotten, and put it up in marble-Veſſels; then one of their Servants treads with his Feet the Wheat thus ſoftened, juſt as we preſs Grapes in Autumn. Now though this is done in the open Air, yet the Smell, which exhales from that frothy Matter is ſo diſagreeable, that both he who treads it, and the Maids who attend to gather up the ſqueezed Matter with their Hands, and take the Juice out of it to be dried in the Sun, complain much of the Head-ach, of a Difficulty of Breathing, and of a Cough which is ſo troubleſome, as to force them to intermit for fear of Choaking. This Smell is to me abſolutely unſufferable, for it ſavours of a moſt penetrating Acid; and it is probable, that the volatile Acid with which Wheat abounds, being put into Motion by the Fermentation, deſerts the Fellowſhip of the other Parts, and flies moſt of it into the Air: At this Rate it cannot but be apt to excite Head-achs, with a Difficulty of Reſpiration, and a Cough: For nothing is more offenſive to the tender Texture of the Lungs, and the membranous Parts, than an acid Exhalation; ſuch is the Smoak of Sulphur, and other acid Things.

I usually advised the People, employed in this Work, to do it in as open airy Places as they can find; and when they have already sustained any considerable Injury, I prescribe, with Success, Oil of Sweet-almonds, Emulsions of Melon-seeds, Barley-ptisans, Treacle-Waters, Draughts of generous Wine, and smelling to the Spirit of Sal-ammoniac.

Now, that I am upon this Subject, I shall take occasion to enquire a little narrowly into the Nature of Starch, which I reckon to be somewhat different from what the Physicians generally take it to be. By the unanimous Consent both of the Ancients and Moderns, Starch is supposed to possess a Virtue of qualifying sharp Humours, stopping Fluxes, and healing Ulcers. *Pliny* * commends it in a Spitting of Blood and Pains of the Bladder. *Galen*†, cries it up mightily in a Looseness, in Inflammations of the *aspera arteria*, in a running of the Eyes, and in all Cases where ulcerated Parts want to be softened and smoothed. *Vallesius* in his Book, *de Sacra Philosophia*‖, prefers it before all other Remedies for the Cure of a Dysentery, and correcting any Sort of Acrimony. The same are the Sentiments of all who have wrote of Starch.

This Opinion may seem very probable, upon the Consideration, that Starch is insipid as to the Taste, and consequently an excellent Absorber of sharp Matter, and likewise, that what Acrimony or Acidity was in the fermented Wheat, is supposed to exhale in the Preparation, and the watery Humour which partakes of the Sharpness, is supposed to be wasted during the Exsiccation of the Starch before the Summer-Sun: For, as *Gorræus* ‡ has it,

Starch

* Lib. 22. *c.* 25. *H. N.* † *De simp. med. fac.* 2. *c.* 36. ‖ *De Comp. med.* 2. *loc.* ‡ *De fin. Med.*

Starch muſt be dried with a very hot Sun, leſt, if any Moiſture be left, it ſhould contract an Acidity. But the frequent Obſervations made by the Women, who commonly uſe Starch in this Country to whiten and ſtiffen the Linnen, have taught me to ſuſpect the Nature of Starch, and not to truſt altogether to its Whiteneſs. For they obſerve, that, when Linnen lies in Starch for any Time, it quickly wears out; and to avoid that Inconveniency, as ſoon as they have fouled it, they waſh off the Starch with fair Water, and ſo keep the Linnen till they have occaſion to waſh it. This is ſufficient Evidence of a conſiderable Acrimony in Starch, which is not ſo obvious to the Taſte: For, if Starch wears out and corrodes Linnen, what Security have we of its Innocence in the Diſeaſes of the Breaſt, in a Roughneſs of the Throat, in Dyſenteries, and in Caſes which require emollient Ingredients, as *Galen* ſpeaks? Though *Pliny* * recommends it in theſe Diſeaſes; yet he plainly ſhews, that he had ſome Suſpicion of its Nature; *Starch*, ſays he, *makes the Eyes dull, and is an uſeleſs Burden to the Stomach, contrary to the vulgar Opinion.* Here we cannot but recommend the Contrivance of ſome Women, who, to avoid the corroſive Influence of Starch, mix Gum Arabic with it.

Doubtleſs, there are many Things in common Uſe which are taken to be inoffenſive, becauſe they injure only gradually and inſenſibly, till ſome Chance or other expoſes their occult Malignity. Thus a great many Sorts of Aliment ſeem to digeſt eaſily in the Stomach, which leave peccant Juices behind them in the Veins. He, ſays *Avicenna*†, who digeſts unwholeſome Things, muſt not deceive

* Lib. 22. C. 5. *H. n.* † 3. *p. Do.* 2. *c.* 6.

ceive himſelf upon the Succeſs of the Digeſtion; for, after ſeveral Days, morbific and pernicious Humours may be engendered from thence. And *Galen* * ſpeaking of the Virtue of Food, ſays, *A peccant Juice gathers in our Veins after a long Time, when we take no Notice of it, and, putrifying afterwards upon the leaſt Occaſion, cauſes malignant Fevers.*

CHAP. XXIV.

Of the Diſeaſes of STONE-CUTTERS.

WE come next to the Diſeaſes of Stone-hewers, Statuaries, Stone-cutters, and that Sort of Workmen; for, in hewing Marble or Stones out of the Rock, in poliſhing and cutting them, they oftentimes ſuck in, by Inſpiration, the ſharp, rough and cornered ſmall Splinters or Particles which fly off; ſo that they are uſually troubled with a Cough, and ſome of them turn aſthmatic and conſumptive. Add to this the metallic Vapour exhaling from the Marble-Stones, which manifeſtly affects the Noſtrils, and the Brain. Thus the Stone-cutters, who work upon the *Lapis Lydius*, are ſaid to be ſo affected both in the Head and the Stomach, by the noxious Smell which conſtantly exhales from thence, that ſometimes they are forced to vomit: And in diſſecting the Corps of ſuch Artificers, the Lungs have been found ſtuffed with little Stones. *Diemerbroec* † gives a curious Relation of ſeveral Stone-cutters who died aſthmatic, and were opened by him; in whoſe Lungs he found

* 2. *de Alim. fac.* c. 6. † Lib. 2. Annot. c. 13.

found ſuch Heaps of Sand, that in running the Knife through the pulmonary Veſicles, he thought he was cutting ſome ſandy Body. He adds, that he was informed by a Maſter Stone-cutter, that in cutting Stones there riſes ſuch a ſubtile Duſt, as is able to penetrate through Ox Bladders hung in the Shop, inſomuch that, in the Space of one Year, he found a Handful of that Duſt in the Cavity of the Bladder; and this very Duſt he took to be the Cauſe of the Death of many unwary Workmen.

Our medicinal Hiſtories afford many Inſtances of Stones found in the Stomachs, and Lungs of theſe Workmen; for which we can aſſign no other material Cauſe, but the duſty Particles taken in at the Mouth, and gradually gathered into a Heap. See upon this Subject *Olaus Borrichius*, of the Generation of Stones in the Microcoſm. For we muſt not imagine that the Stones found in human Bodies are always bred of internal Cauſes, and petrifying Juices; ſometimes the Misfortune is produced from abroad when the Viſcera are innocent. *Wedelius* * obſerved a Stone from an external Cauſe in the Lungs of a Plaiſterer's Servant-maid, which he imputes to the Particles of Lime taken in at the Mouth.

The Butchers meet frequently with Stones in the Stomachs and Inteſtines of Oxen: which diſproves the Opinion of *Ariſtotle* † who affirmed, that no Animal, beſides Man, is affected with ſtony Concretions, unleſs we ſuppoſe he ſpoke only of the Stone in the Kidneys. *Scaliger* ‡ tells us of a Horſe which voided hard ſtony Concretions, one of which he kept by him. And Authors are very large

* *Path. Dog. Sect.* 2. *C.* 4. † *Sect.* 10. *Prob.* 4.
‡ *Exer.* 123.

large upon the Virtues of the Stones of Horſes, which they call *Hippoliti*, but with what Juſtice I ſhall not here determine. However, I think it is very probable, that the Stones, found in the Bodies of Horſes and Oxen, and bred of the Duſt and ſmall Particles taken in at the Mouth in the Summer-time, when they are drawing Coaches and Carts upon duſty and dirty Roads, with their Tongues hanging out.

Purgatives and Emetics will be proper Remedies for the Work-men we now ſpeak of, as being fit to expel theſe noxious Particles which adhere to the Stomach and Inteſtines, and might, in Time, grow into great Stones. And all poſſible Caution muſt be uſed, to avoid the ſucking in of theſe minute Particles at the Mouth.

CHAP. XXV.

Of the Diſeaſes of MASONS *and* BRICKLAYERS.

BRICKLAYERS and thoſe who handle Lime are much in the ſame Condition; for, while they ake the quick Lime with pouring Water upon it, nd have the ſlaked Lime always before them in uilding Walls or plaiſtering, they cannot but reeive at their Mouths and Noſtrils the ſubtile Parcles which exhale from the Lime; and theſe render the Mouth, Throat and Lungs rough, and ocaſion an ill Habit of Body.

Lime being the moſt conſiderable of Alkali's, very Body is acquainted with its Virtues, and parcularly thoſe who uſe to live in Houſes newly done

done over with Lime; for many violent Diſtempers have ariſen from thence. *Hippocrates* * gives us the famous Hiſtory of *Hermocrates*, who was ſeized with a mortal Fever upon lying by a new Wall. And though *Valleſius*, following *Galen*'s Footſteps, alledges, That the new Wall had no relation to the Cauſe of the Diſeaſe; yet *Epiphanius Ferdinandus* † and *Mercurialis* ‡ are juſtly of the Opinion, That *Hippocrates* mentioned the new Wall with an Intention to point out the Cauſe of the Diſeaſe, there being nothing more dangerous than to live in a Houſe newly built with Lime: Witneſs the ſad Experience of many, who have thereupon died either of Suffocation, or of a Fever accompanied with a Deafneſs or Stumor, as happened to *Hermocrates*, who died on the 27th Day. My Lord *Verulam* ſays *Jovinian*, the Emperor, catched his Death by ſtaying too long in a Room, the Walls whereof had been newly waſhed or done over with Lime. Nay, I can bring in myſelf for an Evidence; for, having ordered my Cloſet to be done over with Lime, and reckoning after ſix Months that it was ſafe enough to be in it, eſpecially conſidering the Walls were only waſhed over, I was thereupon ſeized with an acute Fever which was very violent, and after that with a ſlow Fever which haunted me a long while, I have often obſerved, that in new Houſes the Smell of Lime is manifeſtly perceived for many Years, eſpecially in the Morning after the Windows have been ſhut all Night; for they are guilty of a groſs Error, who think it ſafe to ſleep in ſuch Houſes, becauſe they perceive no Smell in the Day-time, when the Doors and Windows are all open.

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* 2. *Epid. Ægr.* 2. † *Hiſt.* 25.
‡ *Hiſt.* 16.

It was a wise Edict which the *Romans* put forth, as *Pliny* * informs us, prohibiting new Houses to be inhabited. So great a Space of Time is required before Houses built with Lime can be inhabited with Safety; but there is no occasion of such Caution if they be built with Parget or fine Plaister, for Parget dries speedily, and produces no ill Smell.

In short, the Bricklayers, and those who take the Lime out of the Kilns, and sell it, are sufficiently acquainted with the formidable Acrimony of Lime. *Wedelius*, as I intimated above, found a Stone in the Lungs of a Lime-maker's Maid, and attributes its Origin to the Particles of Lime taken in at the Mouth by Inspiration. *Amatus Lusitanus* † affirms, that most of those who deal in Lime die of Phthisics. In fine, the Nature of Lime is so largely handled, both by antient and modern Authors, that I need not insist upon it here. The Chemists, who draw a great many Remedies from Lime for external Use, affirm, that it contains a great deal of Alkali, and a little Acid. *Pliny* ‡, admiring the Nature of Lime, says, it is strange, that any thing should be kindled by Water, which was burnt before. But no Author has set the Nature of Lime in so clear a Light as *Tachenius* ‖; for he allots it the chief Place among the Alkali's, and yet ascribes to it a certain Proportion of Acid; which causes that Effervescence upon the Effusion of Water, by virtue of a particular Conflict between the Alkali and acid Parts. It is possessed of a fiery and very caustic Nature; especially when it is new, and has not yet imbibed any Humidity from the Air; and, upon this Consideration, it is no Wonder its fiery Substance should throw out Effluvia

* Lib. 36. *H. N. C.* 23. Lib. 36. *H. N.* c. 26.

† *Cent.* 4. *Cur.* 41.

‖ *Hipp. Chem.*

Effluvia of a very ſubtile Nature, which are highly offenſive to Workmen.

Now I do not ſee how they can avoid theſe Effluvia, unleſs it be by covering their Mouths and Noſtrils with a Napkin; eſpecially when they are handling the Lime, and mixing it with Water, that thus the duſty Particles may be ſucked in in a ſmaller Quantity. It will be of uſe to drink cold Water now and then, in order to allay the Heat and parched Drineſs of the Throat. Oil of ſweet Almonds I have always found to be the very beſt Remedy in this Caſe; for it not only mitigates any Acrimony, but reſtrains the Effervescency of the Lime, which becomes hot, and produces an Effervescence with any other Fluid, but Oil. So that, if theſe Workmen are ſick of the above-mentioned or any other Diſtempers, it will be of great Uſe, for adjuſting the true Method of Cure, to have a particular Regard to the Injuries they ſuffer in the Way of their Buſineſs, and to the Parts which are thereby moſt expoſed; for, according to *Hippocrates*, if any Part is affected before the Diſeaſe appears, there will the Diſeaſe fix, the Humours being always apt to fall upon the weaker Part.

CHAP. XXVI.

Of the Diſeaſes of LAUNDRESSES *and* WASHER-WOMEN.

I Have often had Occaſion to attend Laundreſſes who have been ill of various Diſorders, contracted by the Nature of their Work. Theſe Women,

nen, being confined to moiſt Places, and their Hands and their Feet being always wet, turn cahectic; and, if they ſpend their Life-time in the Buſineſs, they come at laſt to a Dropſy; of which have ſeen many Inſtances. They are likewiſe generally affected with a Deficiency of the Menſes, which ſubjects them to many Inconveniencies. And indeed it is no wonder their Menſtruation hould be diſturbed; for we obſerve every Day, hat Women under a menſtrual Purgation are eized with a ſudden Suppreſſion, upon walking only bare Foot, or waſhing their Legs and Feet with old Water: And much more muſt theſe Women ndergo a Suppreſſion, who make a Trade of eeping their Limbs wet. In fine, the moiſt Air which they always breathe, and the conſtant Moiſture which bedews their Body, is the Cauſe f all theſe Diſorders: For the Pores of the Skin eing by this Means obſtructed, and Tranſpiration npaired, the whole Maſs of Blood is thereupon inted with groſs Juices. And hence come Cahexies, and Suppreſſions of the Terms, with the ther Diſorders which accompany them.

But this is not the only Calamity which Waſh-women are expoſed to, for they are commonly rown into a Cough, and ſoon after into a Shortſs of Breath, by the ſmoaking Vapours, which iſe from the boiling Lye; in which they ſomenes put Lime inſtead of Aſhes. *Horſtius* * reres a Story of a Servant Maid, who, upon leang down her Head over a Kettle full of Lye, was affected with the Smoak, that ſhe was ſeized th a violent Difficulty of Breathing, which laſted ſeven Years, and at laſt ſtifled her. When the rps was opened, the Lungs were found livid, with

* *Sepul. T.* 1. *L.* 2. *Sect.* 1.

with black Caruncles in the Bronchia, which ſtopped the Intercourſe of the Air. Theſe lixivial Fumes therefore, which the Laundreſſes cannot but ſuck in, are apt to vitiate the natural Structure of the Lungs, by over-drying them, and rendering them unfit for their Office.

Add to all this, that, in waſhing all ſorts of foul Sheets and Linnen, ſome perhaps of pocky Perſons, and others of Women under a menſtrual Purgation, they receive at Mouth and Noſtrils a ſtrange Medley and Compoſition of noxious Steams which pollute the Brain and animal Spirits. The Sharpneſs of Lye expoſes them to Chops in their Hands, which are ſometimes ſo deep and troubleſome, as to be followed with an Inflammation and a Fever.

That theſe Women, who are ſo uſeful for making Things clean, may receive ſome Benefit from the Profeſſion of Phyſic, and be inſtructed how to avoid the above-mentioned Diſorders, I uſually adviſe them, as ſoon as their Work is over, to throw off their wet Things, and put on dry Cloaths; in which point they are generally very careleſs: I adviſe them likewiſe to uſe Frictions to turn away their Faces as much as they can from the Smoak of the hot Lye; to anoint their Hands with Ointment of Roſes, or Butter; to abſtain from groſs Food; and to obſerve a regular Diet. When they are actually ſeized with any Diſtempers, ſuch as Fevers, Catarrhs, we muſt exhibit ſtrong Purgatives to throw off the groſs Humours. Antimonials will likewiſe be of uſe, unleſs the Diſeaſe be acute; as well as the aperient and antichectic Medicines, which fortify the natural Hea

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CHAP. XXVII.

Of the Diſeaſes of SIFTERS *and* METERS *of Corn.*

ALL Grain, and eſpecially Wheat, whether kept in Pits under Ground, as in *Tuſcany*, or in Barns, as in the Countries upon the *Po*, have always a very ſmall Powder mixed with them, I mean not only that which they gather upon the Barn Floor in threſhing, but another worſe ſort of Duſt, which Grain is apt to throw from itſelf upon long keeping. For the Seeds of Corn being repleniſhed with a volatile Salt, inſomuch that, if they are not well dried in the Sun before they are laid up, they heat mightily, and turn preſently to a Powder; it cannot be but that ſome ſubtile Particles muſt fly off from the Huſks which ſurround them, over and above the Powder and rotten Duſt proceeding from the Conſumption made by Moths, Worms, Mites, and their Excrements. Now there being a Neceſſity of ſifting and meting Corn and other Grain, the Men imployed in that Service are ſo plagued with this Powder or Duſt, that, when the Work is done, they curſe their Trade with a thouſand Imprecations. The Throat, the Lungs, and the Eyes ſuſtain no ſmall Damage by it, for it ſtuffs and dries up the Throat; it lines the pulmonary Veſſels with a duſty Matter which cauſes a dry and obſtinate Cough; and it makes the Eyes red and watery. Hence it is, that almoſt all who live by that Trade are ſhort-breathed, and cachectic, and ſeldom live to be old; nay, they are very apt to be ſeized with an Orthopnœa, and

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at laſt with a Dropſy. Beſides, this Powder has ſuch a Sharpneſs in it, that it cauſes a violent Itching all over the Body.

When I conſider how ſtrange it is, that ſo pernicious a Powder ſhould flow from ſuch a benign Grain as Wheat, I am tempted to ſuſpect that this Powder has Worms in it unperceiveable to the Senſes; and that theſe Worms being put into Motion, and diſperſed through the Air, in the Sifting and Meaſuring of the Corn, ſome of them ſtick to the Skin, and others enter in at the Mouth; and ſo cauſe that burning Heat and Itching which is obſerved both in the Throat and all over the Body. The famous *Lewenhoeck* * informs us, that he diſcovered with his *Microſcopes* ſome little Worms in Corn, which he calls not improperly *Lupi*; and indeed it ſeems no improbable Conjecture, that theſe Worms plague the Workmen we now ſpeak of.

Nor is it leſs ſtrange, that after Wheat has been kept long in a cloſe Place, and particularly under Ground, it throws out ſuch a noxious Exhalation, as is enough to kill any one who offers to ſet his Foot within the Place, till the Door has ſtood open for ſome Time, to let out the pernicious Air. For this Reaſon, *Zacchia* † is of the Opinion, that the People ſhould not only be prohibited to make ſuch Corn Pits, but be obliged even to pull down thoſe which are built already; and ſays, it would contribute much to the Health and Safety of Cities, if theſe Pits were always digged in open Fields, and at large Diſtances from Peoples Houſes. The Republic of *Lucca* have a wiſe Cuſtom of taking the Corn out of their public Granaries every Year, in the Month of *Auguſt*, and expoſing it for ſome Days to the Sun-Beams; after which they lay it up

* *Ar.* c. nat. Ep. 71. † *Queſt. Med.* l. 5. *T.* 4. *Q.* 7.

up in the Granary again, and by this means preſerve it for many Years, from Worms and Corruption, for the Benefit of the Public.

Theophraſtus * puts the Queſtion, why Wheat is leſs durable and more duſty than any other Grain? And imputes the Cauſe to the Barns, the Roofs of which are ſmoothed, or waſhed with Lime and Sand; for by that means he ſays the Wheat is more heated, and the dry, hot Powder of the Lime, augmenting this Heat, it rots and diſſolves into Powder. *Scaliger*, commenting upon this Place, condemns the Reaſon offered by *Theophraſtus*, becauſe hot and dry Things are ſo far from diſpoſing to Rottenneſs, that they rather preſerve; and reckons, that Wheat becomes duſty, by being ſo heaped up as to be deprived of ſufficient Tranſpiration. For, ſays he, *quod ſuffocatum eſt ferveſcit ac putret*, any Thing that is choaked up heats and corrupts. But even this Reaſon is not ſatisfactory; for we find, by Experience, that, if the Corn be dry and well kept in the Barns, it keeps the longer for being in great Heaps, and never ſtirred. For my own Part, I ſhould chuſe to derive the Shortneſs of the Duration of Wheat, and its ready Mouldering into Duſt, from the large Stock of volatile Salts it is poſſeſſed of, as well as from the Looſeneſs of its Texture.

It were eaſy to put a great many curious Queſtions upon this Subject, but I dread to incur the Cenſure of Digreſſion: It would be worth while to enquire, why Tares, which, in all Probability, are a degenerate Sort of Wheat, there being Inſtances of late Years of Wheat turned to Tares by a wet Spring, ſhould keep above twenty Years

* Lib. 4. c. 17. *de Hiſt. Plant.*

without ſpoiling? Whereas Wheat moulders into Powder, before it is four Years old. Whether it be, that Tares are of a compacter and harder Subſtance than Wheat, for indeed, if we break a Tare, we find it more ſolid than Wheat; and it is upon the Account of this Solidity that Beans, Chiches, and Vetches are more durable; or whether the Worms and Moths have an Averſion to the Tares, by Reaſon of their Bitterneſs and Unpleaſantneſs.

The Corns of theſe Countries being ſcorched and blaſted in the late Years, there was a Neceſſity of waſhing the Wheat very carefully in large Veſſels with fair Water, and then drying it in the Sun. On this Occaſion I had an Opportunity to obſerve, that the Bread made of the Corn thus waſhed was Snow-white: For which Reaſon, if the Corn be good and ſound, I take it to be no uſeleſs Piece of Labour to waſh and dry the Corn before it goes to the Mill. The Workmen, employed in thoſe Services, uſed to cover their Mouth and Noſtrils with Handkerchiefs, to keep out the Duſt, and to waſh their Throats and Eyes often with cold Water; but all this Caution is not ſufficient to indemnify them.

It would certainly be convenient for them to uſe Baths, to waſh off the duſty Filth which ſticks in the Skin along with the Sweet; but now that Baths are in diſuſe, the poor Workmen are deprived of that Benefit: For we muſt not think that theſe antient Builders of Cities and Compilers of Laws, were at all that Charge and Magnificence of Building, not only in great Cities, but even in leſſer Towns, in making public Baths only to gratify the Luxury and Effeminacy of Women and idle Fellows, but likewiſe for the ſake of Tradeſmen and hard Workers, that they might have an

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Opportunity of washing off the Filth of their Bodies, and refreshing their weary Limbs at a small Charge. Upon this Consideration we have reason to curse those who brought so noble a Constitution into Disrepute; and by their open Iniquity in promiscuous Baths, provoked Christian Piety to suppress them.

To conclude, I usually persuade such Workmen as are injured with the Dust of Corn or other Grain to make frequent Use of Ptisanes, Emulsions of Melon Seeds, Whey of Cow's Milk, and the Decoction of Mallows, for by these Means the Acrimony of the putrid Powder is diluted. When they are seized with Asthma's, and other Distempers mentioned above, we must prescribe such Remedies as are proper on such Occasion, not forgetting a particular Regard to the weaker Part, for fear the Disease should turn its whole Force upon that.

CHAP. XXVIII.

Of the Diseases of those who PICK, *or* HATCHEL, *Flax, Hemp, and Silk.*

THE Necessity of Food and Rayment is the same now that it was in the Beginning of the World, when our first Parents were sollicitous to cover their Nakedness, after they were divested of the divine Grace. Nature, our common Parent, has provided many Things to guard our Bodies from the Injuries of the Air, such as Wool, Flax, Hemp and Cotton, to which we may add Silk; though we may easily be without this last, as being invented rather to adorn than to cloath

the Bodies of Men and Women. Such is the Matter which our Cloaths are commonly made of; and thoſe who labour in preparing and working upon theſe Commodities are thereby expoſed to no ſmall Inconveniences. All the World knows the Offenſiveneſs of the ſteeping of Hemp and Flax in the Autumn, the noiſome, and injurious Smell being perceived at a conſiderable Diſtance; and thoſe who hatchel the Flax and Hemp, to prepare it from being ſpun and wove, afford frequent Inſtances of the Unwholſomeneſs of their Trade; for there flies out of this Matter a foul, miſchievous Powder, which entering the Lungs by the Mouth and Throat, cauſes continual Coughs, and gradually makes Way for an Aſthma.

The Hemp-combers and Hatchelers generally come hither in great Companies from the adjacent Borders of *France* and *Lombardy*, about the Beginning of Winter; for the People of our Country are not ſo well acquainted with that Part of the Manufacture. Now we always obſerve that theſe Perſons are daubed over with Hemp duſt, pale-faced, ſubject to Coughs, aſthmatic and bleareyed. The Winter being the Seaſon allotted for this Buſineſs, they are obliged to work in cloſe Places; and conſidering that the Hemp is very greaſy and oily, upon that Occaſion they cannot but take in at the Mouth theſe foul Particles which pollute the Spirits, and ſtuff up the Organs of Reſpiration. Beſides the Hemp and Flax being ſteeped in ſtagnating and putrid Water, and daubed over with Clay to promote its readier Maceration under the Water, the Particles thus imbibed cannot but be virulent and unfriendly to Nature. Theſe People complain, that they ſuffer more in hatcheling Flax than Hemp; and that perhaps, becauſe the Powder or Duſt of the former is ſubtiler, and thus making a briſker

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Irruption into the Organs of Reſpiration, provokes them more ſenſibly to throw off the Matter which injures them.

But worſt of all is the Condition of thoſe who comb the ſilk Cakes, which remain after the making of the Silk in order to ſpin it into Thread for ſeveral Uſes, as being leſs chargeable than the Silk itſelf. For when the Bags of the ſilk-Worms, after being ſteeped in hot Water, are opened and diſentangled by our Women, (that being the peculiar Province of the Women, as if Nature had provided Silk only for their Uſe) and wound upon Reels in ſmall Threads there are ſtill ſome groſſer Threads or Filaments behind, which have Part of the Bodies of the Silk-worms mixed with them; and of theſe they make a Sort of Cakes, which they dry in the Sun, and give out to Workmen to have them drawn out into Threads with ſmall Combs. Now the poor People who comb theſe Cakes are uſually troubled with a vehement Cough, and a great Difficulty of Breathing, few of them live to old Age in that Way of Buſineſs. The Virulence which gives Riſe to this Misfortune, is owing to the cadaverous Particles of the Silk-worms which are mixed with the Cakes. It is worth obſerving, that, while this little Inſect is alive, and feeds upon the Mulberry-Leaves, if its Excrements be thrown out in any Quantity, ſo as to ſtick any where till they putrify, they afterwards caſt forth ſuch a noiſome Smell, when they are ſtirred, as incommodes all the Neighbourhood. And for this Reaſon ſome Cities prohibit the throwing of that Ordure into the public Streets, and enjoin the Perſons concerned to carry it out of the Precincts of the City.

This Inſect has a certain corroſive pernicious Acrimony which is offenſive to the Lungs, as well

as the Palmer-worms, and a great many Inſects of the like Nature, which, like Silk-worms, deſtroy whole Woods. I knew a whole Family in this City which got a good Livelihood by the ſilk Trade, but died miſerably of Conſumptions; the Phyſicians imputing the Cauſe of their Calamity to the Trade they were continually employed in.

I uſually recommend to this Sort of Workmen a Milk-diet above all other Things, there being nothing which more effectually corrects a corroſive and putrid Acrimony. The Decoctions of Mallows, Violets, and Endive, or the depurated Juices of theſe Herbs, will likewiſe be of Uſe. But at laſt if they find their Affliction grows upon them, they muſt look out for another Trade; for it is a ſordid Profit which is accompanyed with the Deſtruction of Health.

CHAP. XXIX.

Of the Diſeaſes of the GUIDES *and* SERVANTS *who attend at* Baths.

AMONG the public Edifices for which *Rome* was ſo famous, nothing made a more magnificent Show than the public Baths; the Largeneſs of which is ſtill to be ſeen in the ruinous Monuments which are left of them. But *Rome* was not the only Place which was guilty of this Prodigalty, for the other Cities and Villages, and even private Houſes, boaſted of coſtly Baths; inſomuch that *Seneca*†, the ſevereſt *Cenſor* of Manners that ever was, expoſes the Luxury of

† Ep. 86.

of the Citizens of *Rome* in this Reſpect. Now Baths are in Diſuſe, and we had been left almoſt in the Dark, as to the Manner in which the Phyſicians themſelves uſed them, as well as the very Terms, Structure, and many other remarkable Things relating to Baths, in the Hiſtory, if the ancient *Thermæ* had not been reſcued from Darkneſs by *And. Bacchius* in his excellent Piece *de Thermis, Mercurialis* in his *Gymnaſtica*, and *Signonius de Jure Ant. Rom.* conſidering that the public Baths were built by the Emperors for the good of the common People, and that every Quarter of the Town was provided with them, to the end that both Men and Women might waſh themſelves every Day at a ſmall Charge, which *Juvenal* * computes to be no more than a Quadrans, the Boys being waſhed for nothing, as the ſame Satyriſt informs us.

Nec pueri credunt, niſi, qui nondum æra lavantur.

Upon this Conſideration we muſt ſuppoſe there was a promiſcuous Croud of Men and Women Servants who attended Night and Day in the Baths, and were called *Balneatores* or *Aquarioli*. Now theſe People, being obliged to live always in Water, and being always employed in rubbing the Sweat, Dirt and Ointments off the Bodies of thoſe who came to bathe, ſometimes in the hot Bath, ſometimes in luke-warm Water, and ſometimes in the coldeſt of all, we may readily apprehend they were ſubject to various Diſeaſes, ſuch as Cachexies, Swellings in their Legs, Ulcers and Dropſies. What Service

* Sat. 2.

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these People did to the Persons who bathed is plainly expressed in that Verse of *Lucilius*,

Scabor, suppellor, desquamor, pumicor, ornor,
[illegible]ilor, pungor.

Though Baths are now obsolete, either by Reason of the Disuse of the gymnastic Exercises themselves, for the sake of which Baths seem partly to have been built, or because we are now accustomed to wear Linnen next our Skins, whereas the Antients, as some imagine, wearing nothing but Woolen, were under a Necessity of cleansing their Bodies often; yet both *Rome* and several other populous Cities have still some Baths for the Use of sick People, and some do still frequent fresh Water-baths in the Summer-time for cleansing and adorning their Skin. Now-a-days it is usual for those who have cuticular Eruptions, such as the Scab, Itch, and venereal Blotches, to frequent the hot Baths and Bagnios, where the Bath-keepers wash them slightly with warm Water, and often apply scarifying Cupping-glasses all over their Body, by which means they draw forth large Quantities of Blood and then send them Home. This both the Patients and the Bath-keepers do without the Physician's Advice; but I leave themselves to consider whether they do it with safety or not: For my own share, I have known oftner than once some of these Adventurers, who by unadvisedly trying this Form of Cure upon themselves, having highly endangered their Lives, as being almost killed with the excessive Loss of Blood; for they sometimes will draw forth, with their Cupping-glasses, three or four Pounds of Blood: for it seems some have taken up an Opinion, that the Blood near the Skin is not by far so rich as that which is drawn from the

the larger Veins: As if the Blood drawn forth by Cupping-glaſſes, which cut the capillary Arteries, were not more florid than that of an opened Vein, which is always blacker. Theſe Bath-keepers are generally pale, wan-coloured, bloated, and cachectic; and are ſometimes ſeized with the very Diſeaſes they pretend to cure in others.

To avoid the tedious Repetition of what we have ſaid before, relating to the Cure of Chachexies and ſuch other Diſeaſes, I ſhall here forbear to make any Addition; for I reckon I do Juſtice to my Subject, if I do but point forth the Diſeaſes which particular Tradeſmen are uſually ſubject to; for my Deſign is not to write whole Treatiſes of Diſeaſes with the compleat Courſe of their Cure, and a long Train of Receipts, but only to furniſh ſome Hints which may be of Uſe to facilitate the Cure of Tradeſmen.

CHAP. XXX.

Of the Diſeaſes of FISHERMEN *and* MARINERS.

THE Diſeaſes of *Fiſhermen* and *Mariners* are alſo of an uncommon Nature; for ſince they live in a moiſt Air repleniſhed with watery Vapours, and feed upon groſs and heavy Food, they cannot but gather peccant Juices in their Veins, and contract ſtubborn Obſtructions, which ſometimes terminate in a Dropſy. *Pliny* *, treating of the Nature of Salt, calls the Bodies of Fiſhermen

* Lib. 31. c. 9 H. N.

Horny, (*cornea*) which Epithet I ſuppoſe he uſed, becauſe the Bodies of Fiſhermen are hardened like Horn, by being expoſed to the Sun and ſaline Vapours; for Salt has a drying Property, as we ſee in ſalt Meat: And it is obſervable, eſpecially in the Summer-time, that Fiſhermen have a Skin as hard as an Elephant's Hide. *Riverius* † has an Obſervation of a certain Fiſher-woman who had a violent Itch and Ring-worm all over her Body.

Fiſhermen and Seamen uſed to have ugly Ulcers in their Legs; and to be extended all over their Bodies. In general, all the Diſorders they labour under are of a ſcorbutic Nature; as the learned *Wedelius* has well obſerved of the Inhabitants of of the *Baltick* Shore, and *Glauber*, in his Treatiſe *de Conſolatione Navigantium*. They are likewiſe troubled with a Coſtiveneſs, eſpecially at Sea, tho' they eat a great deal more than they who live on Shoar, the Cauſe of which *Helmont* ‡ imputes to the Air, as being impregnated with ſaline Vapours, which ſerve at once to whet the Appetite and conſtipate the Belly, as well as to the fluctuating Motion, which brings them continually into freſh Air, and ſo ſpurs on the Fermentation of the Blood. Accordingly we find, that Clyſters of Sea-water provoke to Stool very forcibly, but they leave a Coſtiveneſs behind them. To this purpoſe is that memorable Place of *Hippocrates* *, cenſuring the Miſtake of thoſe who take ſalt Waters to be laxative, when at the ſame Time they are abſolutely of a contrary Nature; and this may ſerve to ſhew thoſe, who preſcribe Clyſters with much Salt in coſtive Caſes, how far they depart from the Sentiments of their divine Predeceſſor. *Hippocrates* took likewiſe notice

† *Obſ. comm. obſ.* 39. *Path. med. Sect.* 1. c. 8.
‡ *Blaſ. Hum.* N 36. * *De Aer. Aq. et Loc.* n. 16.

notice of the Ulcers, to which Fishermen are subject, and orders them to be washed with Sea-water. It is true, some may think that Sea-Water is an improper Fomentation for such Ulcers, because its biting, pungent Nature irritates and provokes a Flux of Humours; but *Martianus*, in his Comment upon this Place, justifies the Prescription of *Hippocrates* very judiciously, because the Ulcers of Fishermen that live in maritime Places, are squalid and dry, and by the Application of irritating Things, may be brought to Suppuration, without which it is impossible to cure them. *Galen* ‖ made the same Observation, that the Ulcers of Fishermen are dry and sordid, as if they were pickled with Salt: But after all, we must think that the Ulcers of such Fishermen as fish in fresh Water and Lakes, are of a different Nature from those of the Fishermen who are used to the Sea; for they abound with too much Humidity, and are to be cured after a different Manner, by such drying Things as are accompanyed with no pungent Sharpness: For *Hippocrates* ‡ tells us, that a dry Ulcer is more likely to be cured than a wet one.

Upon this Occasion I cannot but take Notice of that divine Caution of *Hippocrates*, who speaking in the Place above quoted, of the Use of Sea-Water in the Ulcers of Fishermen, says, *If you use it sparingly it irritates and provokes, but if you use it liberally it does good*: So that when we have Occasion for sharp Medicaments, as in sordid Ulcers, for taking off the corrupt Matter and putrified Flesh, we ought to use them in a convenient Quantity till the peccant Matter is consumed, and the Ulcer dried: For this I perceive is a frequent Error in

† *De Humid. usu*, n. 7. ‖ *De Simp. Med. fac.* l. 1. c. 7. ‡ *De Ulcer.*

in Surgeons, who uſe Corroſives and Cauſtics ſparingly, and ſo do more Harm than Good, by reaſon of the diſproportionable Quantity of the Remedy: Juſt as in the Caſe of Purgatives, of which too ſcanty a Doſe irritates, but does not carry off the peccant Humours; as it happened to a young Man mentioned by *Hippocrates**, who, upon drinking a weak Infuſion of Hellebore, died four Days after without any Purgation.

It appears therefore, that the Diſeaſes of Fiſhermen and Sea-faring Men require a particular Method of Cure; for their Food being ſo far different from that of the other Inhabitants of the Earth, and conſtantly expoſed to all the Injuries of the Weather, as well as to the continual Alarms of Danger, cannot but be liable to violent and ſtubborn Diſeaſes. *Thomas Bartholine* in *Bonetus*'s *Medicina Septentrionalis* † affirms that Medicines muſt be given to Sea-faring-men in a triple Proportion to the common Doſe of thoſe who live on Shoar, or elſe they will not produce the deſired Effect. And this Caution he extends not only to Purgatives, but to Diaphoretics, Diuretics and all other Medicines. *Joannes de Vigo* *, Surgeon to Pope *Julius* II. has a particular Chapter of the Fevers of Sailors: And indeed conſidering that Sailors are forced to feed upon groſs Food, ſalt Meat half rotten, Water, and Bread half Worm-eaten, we cannot but conclude that their Bodies are full of bad Juices, and diſpoſed to malignant Fevers, and therefore we ought to exhibit to them the more generous Sort of Remedies.

CHAP.

* 5. *Epit.* n. 16. † *Tom.* 1. l. 8. p. 4. Sect. 1. c. 9. * Lib. 9. c. 4. *de Addit.*

CHAP. XXI.

Of the Diſeaſes of thoſe who work in SALT-PITS.

'TIS a juſt and beautiful Saying of *Pliny* †, that nothing is more uſeful than the Sun and Salt; to which we may add, that indeed nothing is more neceſſary. The divine Architect, foreſeeing the Neceſſity of Salt for the Uſe of Mankind, did, in the Infancy of the Creation, conſtitute the Sea the Store-Houſe and the Diſpenſer of that Subſtance from whence it might be conveyed, through ſubterranean Paſſages, to the higheſt Mountains, and there appear in Springs of Salt-water. Hence we have a foſſile and native Salt in various Places, by virtue of the Salt gathering into concrete Lumps as the ſalt Water paſſes along; unleſs we ſhould imagine, that God made Mountains of Salt originally in the very Fabric of the World. Beſides that, we have an artificial Salt which is more commonly uſed, and is made of the Sea-water, thrown by the Tide into certain Ditches and Pits, where it is dried up in the Summer-time by the Beams of the Sun, leaving a copious Sediment of Salt at the Bottom.

The City of *Cervia*, which is ſeated on the *Adriatic* Shoar, and was once immediately ſubject to the *Ravennatian* Church, furniſhes theſe Countries, and moſt of *Italy*, with great Quantities of this Bay-ſalt: And indeed I would willingly have paid

† Lib. 31. c. 9. H. N.

paid a Viſit to that Place, but my Buſineſs would not permit me. However, I took care to procure due Information by Letters, which I owe to the Humanity of the famous *Joſeph Lanzonius*, Profeſſor of Phyſic: But his Letters did not arrive ſoon enough to enable me to rank this Chapter among the Artificers who work upon Minerals. He informed me, that, in that City and the Salt-pits belonging to it, the Air is ſo impregnated with corroſive Spirits, as to corrode Iron, which thereupon ſoftens like Wax and moulders into Powder; that all the Workmen are chachectic, dropſical, and troubled with ſordid Wounds in their Legs; that they eat and drink prodigiouſly, and their Appetite is in a manner never ſatisfied; that ſudden Deaths happen frequently among them; that the Method of Cure is various, there being divers Phyſicians frequently ſent for from various Places; that there is very little Place for any ſort of Remedies, eſpecially in their acute Diſeaſes, which are always accompanyed with lethargic Symptoms; and that by Reaſon of the vaſt Quantity, or rather the very Mountains of Salt, which *Leander Albertus* ſays, he often beheld with Admiration. It is probable, that great Quantities of the Spirit of the Salt are elevated into the Air, which they overſtock with a corroſive Acid which corrodes Iron, and at the ſame time makes the Blood of the Workmen highly acid; which gives Riſe to Cachexies, Dropſies, and Ulcers of the Limbs, theſe being naturally produced by a luxuriant Acid.

Their boundleſs and inſatiable Appetite may be reaſonably imputed to the ſame acid Spirit of the Salt which whets the Ferment of the Stomach. The very Ancients knew, that the canine Hunger which *Hippocrates* * ſays is cured by Wine, pro-

* 2. *Aph.* 22.

proceeds from a preternatural Acid in the Stomach; and with that View they perſcribed in this Caſe generous and ſtrong Wine, fat Eatables, and whatever is very oleous, as *Galen* has it in his Comment upon the laſt quoted Aphoriſm of *Hippocrates*; theſe Things being apt to break and ſubdue, the acid Ferment of the Stomach, juſt as acid Spirits are dulcified with Spirit of Wine. Their drinking much may likewiſe be aſcribed to the ſaline Exhalations, or to the ſerous Floods which abound in their Body and diſpoſe them to a Dropſy; for dropſical Perſons are perpetually thirſty.

I cannot pretend to determine whither theſe violent Diſorders are owing only to the Spirit of the Salt imbibed by the Workmen along with the Air in Inſpiration, or likewiſe to other Cauſes, ſuch as the Unwholeſomneſs of the Air, which that City is commonly charged with. I am informed that this City is almoſt deſolate for want of Inhabitants; and for that Reaſon the Popes have made it a Place of Liberty and Privileges, and a Sanctuary for Debtors and Exiles, who generally repair thither to pay their laſt Tribute to Nature, when they cannot pay their Debts. It is certain that in many other Places, where Salt is made, the Workmen are not by far ſo much injured; ſo that the ſole Exhalation of the acid Spirit cannot be the only Thing which is in the Fault. We all know that *Venice*, the moſt populous City of *Italy*, and the Queen of the *Adriatic* Sea, has a wholſome Air, notwithſtanding it is encompaſſed with Exhalations from the Sea: And for further Satisfaction upon that Head, you may conſult the excellent Treatiſe of *Ludovicus Teſti*, Phyſician at *Venice*. In the Country of *Piacenza* there are Pits or Wells of Salt-water, from the Decoction of which they make

make Salt, and form it into Lumps with a ſmall Quantity of Cow's Blood: And this Manufacture being one of the principal Branches of that Duke's Revenues, a great many Workmen are imployed about it, and yet are not expoſed to ſuch violent Diſorders.

It is not improbable that the making of Salt is ſo laborious a Work, that not only the Matter upon which they work, but the very Fatigue and Labour they undergo may contribute to their Calamity. The Toil and Laborioufneſs of this Work is deſcribed at large by *Georgius Agricola* *, who not only ſets down various Artifices and Contrivances for boiling the Salt-water, or conveying it into the Pits or Yards, but gives a Deſcription of the Workmen, who by reaſon of the exceſſive Heat have only Straw Caps upon their Heads, and little Breeches to cover their Nakedneſs, the reſt of their Bodies being all over naked; ſo that Part of their Miſery is chiefly attributed to the Violence of the Fire, the ſcorching Heat of the Sun, and their other hard Work.

However I cannot deny, but that the very Manufacture they work upon is highly prejudicial to their Health: I obſerve, that in our Salt Ware-houſes the Walls are half eaten through, ſo as to leave Chinks between the Bricks; which I impute to the penetrating Spirit of the Sea-ſalt which attacks the Alkali of the Lime and deſtroys it; juſt as in the mixing of Cow's Blood with the *Piacenza* Salt, the Acid of Salt ſeizes upon the Alkali of Blood, and makes it run into Grains or ſeperated Pieces. Beſides it is obſervable, that thoſe who attend in the Ware-houſes, or Shops, to ſell the Salt

* Lib. 12. *De Re Met.*

Salt, are commonly wan-coloured, and apt to be unhealthy.

It is certain, the Condition of these Tradesmen is absolutely miserable; for the Salt especially that of *Italy*, being commonly made in maritime Places, where the Sea-water stagnates in Ditches and Inclosures, and so pollutes the Air that few Physicians care to practise in such Places; the poor Wretches are often swept off with acute Diseases, for want of seasonable Remedies; or else fall into lingering or consumptive Diseases. However such Physicians as are called thither ought to be very cautious of Bleeding; for the Blood of these People, being dissolved by the saline Exhalations, the opening of a Vein may readily occasion a sinking of the Spirits, and add Strength to the Disease. Purgatives, especially those of the strongest Kind, seem to be more proper, upon the Account that they carry off the Redundance of the Serum; and the Alkali, with which most Purgatives are stocked, qualifies the acid Disposition of the Humours. Generous Wines, Spices, all Ingredients possessed of a volatile Salt, Tobacco chewed, Decoctions of Tobacco leaves, and in general, whatever is apt to controul the Acidity of the Blood, are proper on this Occasion. The Method of dulcifying Spirit of Salt with rectified Spirit of Wine, may serve as a general Rule to point out the Nature of the Remedies here required.

CHAP.

CHAP. XXXII.

Of the Diſeaſes of ſuch who ſtand when they are at Work.

IN the foregoing Chapters haing viewed the Condition of the Tradeſmen, whoſe Health is impaired by the malignant Quality of the Matter or Commodity upon which they work, we now come to the others whoſe Health is affected by other Cauſes, ſuch as particular Poſtures of the Body, and inconvenient Motions requiſite in the Way of their Buſineſs. Among ſuch ſome ſtand all Day, ſome ſit, ſome have their Faces bended to the Ground, ſome ſit double with their Backs bended, ſome are obliged to run, others to ride, and others again to various Sorts of Exerciſes. The firſt we here deal with are thoſe who ſtand all Day long, ſuch as Carpenters, Coopers, Sawers, Ingravers, Blackſmiths, Bricklayers, and many others, whom for Brevity's ſake, I forbear to name. In general, thoſe who ſtand at work are ſubject chiefly to Varices, or Swellings in the Veins; for the tonic Motion of the Muſcles retards the Courſe of the Blood, upon which it ſtagnates in the Veins and Valves of the Legs. How much the Diſtention of the Muſcles contributes to retard the natural Motion of the Blood is apparent to any one who does but feel his own Pulſe when his Arm is ſtretched out; for then he'll find it very low and ſmall. In the Caſe now before us, the muſcular Fibres of the Legs and the Loins being ſtretched out, the Arteries which run downwards are thereby preſſed and ſtraitned; ſo that their Cavity being narrower, they don't puſh forward the Blood with that

hat Force which takes place in walking, where he alternate Motion of the Muſcles conſpires to ſſiſt them: Hence the Blood, that returns from he Arteries into the Veins, does not receive the eceſſary Force from the Impulſe of the Arteries o make it riſe in a perpendicular Line; ſo that, or want of the due Impulſe to back it, it ſtops nd produces Varices in the Legs. Accordingly ve find *Juvenal* * ſpeaking of the *Haruſpices*, who vere obliged to ſtand long in viewing the Intrails, ays,

Varicoſus fiet Haruſpex.

In ancient Times, to keep long in a ſtanding oſture, and that ſo firm as not to be eaſily mov-d, was a Sort of Exerciſe peculiar to the *Roman* Militia, as the learned *Mercurialis* ‖ informs us in is *Gymnaſtica*; where he adds, by a very probable Conjecture, that *Caius Marius* got Varices in his egs by ſtanding in the Field of Battle, as it be-ame a brave General to do. We learn from *Suetonius*, that *Veſpaſian* uſed to ſay, an Emperor ought to die ſtanding: And it is certain, that *Caius Marius* was ſo much accuſtomed to ſtanding, hat he ſtood upon one Leg while the Varices were ut in the other. *Virgil* ‡, deſcribes *Æneas* in a tanding Poſture, while *Japis* the Phyſician was en-leavouring to take an Arrow out of his Wound.

Stabat acerba fremens ingentem nexus in haſtam Æneas.

But

* Sat. 6. ‖ Lib. 6. c. 1. ‡ *Æneid.* l. 12.

But the moſt remarkable Story of this Nature is what *A. Gellius* relates of *Socrates*, that he uſed to ſtand Night and Day, from Sun-riſe to Sun-riſe in the very ſame Poſture, unmoveable, with his Face and Eyes always pointed to the ſame Place, as being loſt in profound Thought, the Mind retiring, as it were, from the Body.

Much ſtanding uſed likewiſe to produce Ulcers in the Legs, a Weakneſs in the Joints, nephritic Pains, and a Piſſing of Blood. I have obſerved a great many Servants who attend at the Courts of Princes complaining of a Pain in the Kidneys; for which they can aſſign no other Cauſe but the continual ſtanding; for when the Body is in an erect Poſture, the Fibres of the Muſcles of the Loins muſt needs be bent, which neceſſarily affects the Kidneys; ſo that the Blood does not circulate ſo freely, nor the Secretion of the Serum proceed ſo regularly as it ought to do.

A weak Stomach is likewiſe the Companion of thoſe who ſtand at Work, for in a ſtanding Poſture the Stomach hangs, whereas when we ſit or bend our Bodies it reſts upon the Inteſtines, and for this Reaſon, when we are ſeized with any Diſorder in the Stomach, we naturally bend the whole Body forward, and draw up our Knees and Legs. The learned *Bacon* obſerves*, that the Galley-ſlaves are fat and well-complexioned, notwithſtanding the Miſery of their Condition; becauſe they row in a ſitting Poſture, and exerciſe their Limbs more than the Abdomen and the Stomach. The ſame Obſervation holds of Weavers, who exerciſe their Hands and their Feet at once; for the moving of the external Parts and leaving the internal at reſt, renders our Bodies fatter and luſtier than ſtanding and walking, which are apt to tire us.

It

* *Hiſt. Nat. Cent.* 8.

It is worth the while to enquire how it comes o paſs, that ſtanding for a little while tires us more han either walking or running for a longer Space f Time: The common Opinion is, that it is ow-ng to the tonic Motion of all the antagoniſt Muſ-les whether extended or bended. But this Opi-ion is confuted by the learned *Borelli**, who de-nonſtrates, that the Arm is ſtretched out without he Action of the Flexores, or bending Muſcles, nly by the active Force of the Extenders; and hat the Caſe is the ſame in the erected Poſture of he Body, where all the Benders lie by, and only he Extenders are employed to act. This inge-ious Author imputes the Cauſe of our being ſo oon tired with Standing to the continual and unin-errupted Action of the ſame Muſcles; for, he ays, Nature delights in alternate and interpolated ctions; and for that Reaſon walking does not ire us ſo much; and thoſe who ſtand alternately pon one Foot at a Time, are leſs tired than if hey ſtood upon both at once. This Tendency of Nature we may plainly perceive in the Beaſts, par-icularly in Pullets, who ſometimes ſtand upon one oot while they hold up and ſave the other; and n Aſſes, who, upon long ſtanding, are obſerved o reſt one of their hinder Feet in the Stirrup. This alternate Succeſſion of Action is agreeable to Nature, not only in the Motion of the Body, but n almoſt all the natural Functions: For if we look eadily upon one Object, if we liſten with our ars to one Sound, if the ſame Meat be often rved up at Table, if our Noſtrils be long expoſed o the ſame Smells, we are uneaſy; ſo much does Nature delight in Viciſſitude and Change. Ac-ordingly we ſee the *Jews*, when they were fed with

* *De Mot. Anim. Prop.* 231.

with Heavenly Manna in the Wilderneſs, began t
long for the *Ægyptian* Garlic and Onions. Thu
Horace, in his *Art of Poetry*, expreſſes himſelf i
the following beautiful Manner.

Ridetur Chorda, qui ſemper oberrat eadem.

Upon the whole thoſe Tradeſmen, who are ob
liged to ſtand when they are at work, ought t
ſhift their ſtanding Poſture as often as they can
either by ſitting now and then, or walking or mo
ving the Body any other Way: They will find Be
nefit from whatever is apt to remove Laſſitude
and reſtore the Spring of the Parts, ſuch as moiſ
Frixions, Fomentations and Baths. As for th
Cure of the Varices, the Ulcers of the Kidneys
Ruptures and other Diſorders, conſult the Practi
tioners who have wrote upon ſuch Diſeaſes.

CHAP. XXXIII.

Of the Diſeaſes of ſuch Tradeſmen as SIT MUCH.

THE Tradeſmen who lead a ſedentary Life, ſuch as Shoe-makers and Taylors, are likewiſe expoſed to peculiar Diſeaſes. Both theſe, and all other Artificers, whether Men or Women, who work in a ſitting Poſture, are, by the ſedentary and bending Poſture of their Body, ſo formed, as to have their Backs bended or bowed, with wry Necks, or their Heads hanging down as if they were looking for ſomewhat on the Ground: They ar

are not so much hump-backed as roundish about the Shoulders, the Vertebræ of the Back being equally protuberant: Since they sit crooked to do their Business, the Ligaments of the Vertebræ are distracted in the external Part, contract a Callosity, and so cannot return to their natural Posture. *Wedelius* * mentions a Shoe-maker who was thus crook-backed to an incurable Degree, because he had neglected it in his Youth.

The Taylors, being obliged to clap their Feet to their Thighs when they work, are often troubled with a Numbness in the Legs, a Lameness, and the Sciatica. Certainly it is worth while to observe the Societies of Taylors and Shoe-makers, when they make their public Processions, two by two, upon Festival Occasions; or, when they march at the Funerals of those of their Number, for they make a crooked hump-backed lame Figure, wrigling sometimes to one Side, sometimes to another, as if they were set to act such a Part on Purpose.

The sedentary Trades-people use likewise to be scabby and ill-complexioned, especially Taylors, and the Needle-women who work at Home Night and Day; for, if the Body is not moved, the Blood grows foul, its Excrements stick in the Skin, and the whole Habit of the Body is tainted. They are likewise more soluble in the Body than those who follow Exercise; for, as *Hippocrates* † informs us, the Excrements of the latter are scanty, yellow and hard: And the same Author ‡ describes the Case of one *Cleotimus* a Shoe-maker, who had a Swelling in the Region of the Liver, and a Laxity of the Belly; as well as the Case of another ‖ who voided

* *Path. Dogm. Se.* 1. c. 1. † *Pror. rs.*
‡ 7. Epid. 30. ‖ 4. Epid. n. 9.

voided Blood at the Noſe, and then had a moderate Evacuation by Stool.

In fine, their ſedentary Life expoſes them to an ill Habit of Body, and a manifold Redundancy of vicious Humours. But all ſitting Tradeſmen are not equally expoſed; for Potters, Weavers, and others who exerciſe their Hands and Feet, and the whole Body, are of a healthier Conſtitution; the Impurities of their Blood being more eaſily diſcuſſed by virtue of that Motion. The Weavers indeed uſe to complain of a Pain in the Loins, which proceeds from the violent Motion and great Force which they are obliged to uſe in weaving coarſer Cloath, and that which is made of Hemp: And this Piece of Service being generally allotted to Women, we find, that thoſe who are big-bellied are very apt to miſcarry; for the Force of that Motion jogs the *Fœtus*, eſpecially if the Women live in a City or Town; your Country Women indeed will bear a great deal without receiving any Injury. However, it is obſervable, that not only Weavers, but all ſedentary Artificers are ſubject to a Pain in their Loins; purſuant to that noted Saying of *Plautus*,

Lumbi ſedendo oculi ſpectando dolent.

I cannot ſee what prefervatory Cautions can be given to theſe Tradeſmen, as long as the occaſional Cauſe is in Force, and Neceſſity obliges them to work at their Trade: Purging indeed in Spring and Fall will prevent the Collection of ſo great a Redundance of Humours, ſo that they will not be ſo often ſick. They muſt be ſure to exerciſe their Bodies on Holidays, and repair the Damage of many Days ſitting by the Exerciſe of ſome. When they are actually confined to their Beds either by the

he above-mentioned or any other Diſorders, we muſt endeavour to evacuate the Humours, and withal have a careful Eye upon the Parts which are moſt expoſed in the Way of their Buſineſs; for the Humours will be apt to fall upon theſe. To this purpoſe is that memorable Place of *Hippocrates*, where he deſcribes two Men who had Swellings in their Hands; for both of them had been troubled with a Cough, and when the Defluxion came upon the Hand the Cough ceaſed: And he adds, that thoſe who had occaſion to ride or travel had a Defluxion upon the Loins and Thighs. So readily do the Humours repair to thoſe Parts that through violent Exerciſe have loſt their Strength and Firmneſs.

CHAP. XXXIV.

Of the Diſeaſes of the JEWS.

THE *Jews* are a Nation not to be paralleled upon the Face of the Earth; they are diſperſed through all Countries, and have no fixed Habitation any where; they are an idle People, and yet deal very much in the Way of Commerce; they neither plow, nor harrow, nor ſow, and yet reap plentiful Crops. However, this unaccountable Nation is liable to various Diſeaſes, which are owing not to their Extraction, as the Vulgar think, nor yet to their Way of Feeding, but to the Arts and Trades which they practiſe. A natural and national Stink is but falſly aſcribed to the *Jews*; for that obſerved among the ordinary People is on-

ly owing to the Neceſſity of their Circumſtances; and we cannot but conclude that, when they lived in the Royal City of *Jeruſalem*, they were a clean-ſcented People.

All the *Jews*, and particularly the vulgar Sort, which make much the greateſt Number, are accuſtomed to ſedentary and ſtanding Trades. Sewing and fitting up old Cloaths is an Imployment they always follow; and their Women, whether Maids or married Perſons, gain their Livelihood by their Needle more than any other Women whatſoever; for they neither card, nor weave, nor mind any other Piece of Houſwifery beſides ſewing; and in that indeed they are ſo expert, that they will patch up Woollen, and Silk, and any other Sort of Garments, ſo as to leave no Appearance of a Seam. This the *Romans* call *Rinacchiare*; and the *Jews* find their Account in it, for they palm ſuch Garments made of a great many Pieces upon the ignorant Mob, and ſo gain a great deal of Money.

This Employment ſtrains the Eyes very much; for the *Jewiſh* Women ſit at it not only all Day, but even late at Night by a very faint Light, ſuch as the Funeral Lamps generally caſt; and thus they not only undergo all the Diſadvantages of a ſedentary Life, but, in Proceſs of Time, contract ſuch a Weakneſs in their Sight, that, by that Time they are forty Years of Age, they are ſhort-ſighted. Add to this, that in moſt Cities the *Jews* live in narrow Lanes, and their Women have a Cuſtom of ſtanding at the Windows in all Seaſons of the Year to take the Advantage of the Light; by which means it comes to paſs, that they ſuffer various Diſorders in the Head, ſuch as Head-achs, Pains of the Ears and Teeth, a dull Heavineſs, a Hoarſeneſs, and Bleareneſs of the Eyes: In fine,

many

many of them, especially of the ordinary Sort, are deaf, blear-eyed, toothless, hump-backed, and lame.

As for the Men, they either sit in their Shops all Day long patching up their old Rags, or stand waiting to catch Customers; and almost all of them are cachectic, melancholy, surly, and generally scabby; for there are but few, even of the richer *Jews*, who have not some Tincture of the Itch; so that this Foulness seems to be a natural Disease, and the Remains of the Elephantiasis which was formerly so familiar to their Nation.

They are likewise accustomed, especially in *Italy*, to mend the Flock Beds, by beating the Wool with Rods upon Hurdles made of Twigs, after these Beds have been lain upon for some Years, and hardened by Use. By this Means they earn a great deal of Money; but in beating and working this old Wool which has been so often bepissed and dawbed with Filth, they suck in at the Mouth a great deal of nasty Dust, which turns their Stomachs, and disposes them to a violent Cough, and a Difficulty of Breathing. I have known a great many *Jews*, who, by following this Exercise, have reduced themselves to an incurable Consumption; as they owned themselves. The pernicious Powder, or Dust, which does all this Mischief does not proceed so much from the old Wool as from the Impurities of People's Bodies lodged in it. In this Country we have a Custom, when any one is buried out of a Family, of giving out to the Washer-women the Sheets and Linnen, or any other Thing which the deceased Person made use of, and of sending for a *Jew* to air, and beat, and cleanse the Flock Bed; so that the *Jews* are in the same Condition with the Undertakers of Funerals;

ſince they cannot do their Office without ſucking in ſome dead Steams, and injuring their Lungs.

All the World knows that our writing Paper is made of old Linnen and Canvaſs-rags ſoftened in Water, putrified and beat; and that, by a very ingenious and admirable Sort of Art, unknown to the Antients, who wrote upon waxed Tables and Skins, or Paper brought from *Ægypt*. Now this covetous People (the *Jews*) have a Cuſtom of crying theſe Rags up and down the Streets, and ſo buy them up at a ſmall Purchaſe, till they have picked up great Heaps to be ſold to the Paper Merchants. When they bring their Loads home to their Houſes, they turn up and examine them every Way to ſee there be no Woollen or Silk among them, for that they throw away, as being of no Uſe in the Manufacture of Paper (though we know there is China Paper made of Silk;) then they pile up great Heaps of naſty Rags in their Shops or Ware-houſes, and in earneſt, it is not credible what an ugly Stench riſes, as often as they ſtir theſe Heaps in filling great Sacks to be ſent to the Paper Men.

By this Means they become ſubject to Coughs, Difficulty of Breathing, loathing of Food and Vertigo's; for what can be imagined more naſty and abominable than a joint Heap of all the Filth which comes from Men, and Women, and dead Corps? So that it is a pitiful as well as a horrible Spectacle, to ſee Carts loaded with theſe Remains of Poverty and human Miſery.

We are therefore to ſee what Service we can do theſe People, in preventing the Detriment which thus accrues to their Health from the Trades they follow. As for thoſe who are taken up in Sewing, whether Men or Women, I reckon nothing more conducive than the Exerciſe of their Bodies,

Bodies, which contributes moſt eſpecially to remove Obſtructions, to fortify the natural Heat, to promote Tranſpiration, and take off ſcabby Eruptions. So I would adviſe the Women, eſpecially thoſe who follow the ſewing Trade ſo cloſe, to ſpare ſome Hours now and then for the ſake of their Healths; and to eaſe both their Hands and their Eyes, for fear the Loſs of their Eyes ſhould afterwards oblige them to an idle and a miſerable Life. Frequent Purgation is uſeful to prevent the Collection of ſo great a Redundance of Humours; but the Purgatives muſt be of the gentler Sort, ſuch as the Lenitive Electuary, Pills of Aloes, Rhubarb, and the like. I do not find Bleeding to be ſo proper; for their Blood being diſpirited and low, their Strength is eaſily impaired: Beſides, they have a firm Opinion (which is not far removed from Truth) that nothing is ſo pernicious to weak Eyes as Bleeding. Cauteries upon the Arms and Thighs they bear eaſily, and find them beneficial, theſe being the proper Emiſſaries for the gradual Evacuation of the Impurities of the Body.

As for thoſe who are imployed in gathering old Rags and cleanſing Beds, they require ſtronger Remedies, and ſuch as will evacuate the ſordid Particles by Stool, or rather by Vomiting, this being the more expeditious Way; ſo that Antimonials will be very proper; and likewiſe Alexipharmical Medicines, ſuch as Vinegar of Treacle, Treacle itſelf, and the like. When they are at work they ought to waſh their Mouth now and then with Vinegar and Water, and cover their Face and Noſtrils, to prevent the Ingreſs of the volatile Atoms.

CHAP. XXXV.

Of the Diſeaſes of COURIERS, *or* RUNNERS.

IN antient Times Running was called among the Number of the Gymnaſtic Exerciſes; and in the public Schools the Children, whether Free-born or Slaves, were taught by their Maſters to run; for at the public Games and Shews, they uſed to run Races, the Victor being rewarded with a Crown.

By this Sort of Exerciſe Men became fitter for waging War; that is, as *Vegetius* has it for running in with greater Force upon their Enemies, for poſſeſſing advantagious Poſts with greater Expedition, or preventing their Enemies from doing the like, and for overtaking their Enemies upon a Purſuit. Upon theſe Accounts the *Turks* do ſtill keep up the laudable Cuſtom of inuring their Soldiers to run faſt. *Plato* * was for accuſtoming the Women to the Exerciſe of Running, to the end they might be uſeful in performing military Offices, and defending their Country. *Suetonius* informs us, that not only the Princes and the Emperours, but even the noble *Romans* had their Curſors, or Runners, whom they called *Pueri, à Pedibus.* But, in the Age we now live in, ſuch Exerciſes are in diſuſe; only the Princes and Perſons of Quality keep Footmen to run before their Coaches and carry Meſſages.

In

* 2. *De Leg.*

In short, this Sort of Men are subject to various Diseases: Ruptures and Asthma's are common among them; and the same thing is observed of Race-Horses: Frequently they are subject to a spitting of Blood. Hence *Acanthio* in *Plautus*, complaining to his Master, that he was almost killed with Running, says *:

Tua causa rupi Ramicem, jamdudum sputo sanguinem.

And his Master advised him to take *Ægyptian* Rosin made up with Honey, for Cure; so that we see resinous Things were recommended, in the Diseases of the Breasts, by the Ancients. They are likewise very lean and slender, the spirituous Parts of the Blood and the nutritious Lymph being exhausted along with the Sweat. Generally speaking they are subject to the Diseases of the Head; which made *Aristotle* † put the Question, how it came to pass, that fast Running caused Diseases of the Head, since Motion uses to throw the Excrements downwards. The true Solution of which is, that in running very fast the Vesicles of the Lungs are too much inflated and heaved up, which puts some Stop to the Reflux of the Blood in the *Vena Cava* above the Heart, by cramping the Freedom of its Ingress into the pneumonic Vessels, the Consequence of which is, that the Blood stagnates in the Head, and so excites various Diseases, which are not observed upon running moderately, which is rather apt to promote the Descent of the Humours to the lower Parts.

Those who run much are often liable to acute and violent Diseases of the Breast, such as Pleurisies

* *Menoch. Att.* 1. † *Sect.* 5. *Prob.* 9.

and Peripneumonies; for being cloathed very thin and light, and withal expoſed to Wind and Weather, when they happen to be all in a Sweat, and then cool of a ſudden, the Obſtruction of the Pores cannot but cauſe pernicious Diſorders, eſpecially in the Organs of Reſpiration, which, in running, are heated with frequent Action. Sometimes they void bloody Urine, ſome ſmall Vein being broke in the Kidneys; and for that Reaſon *Celſus* * condemns running in the Diſorders of the Kidneys. They are very apt to be troubled with Ruptures; for the forcible keeping in of the Air breaks or diſſolves the *Peritonæum*; and upon that Account *Paulus Ægineta* † adviſes thoſe who are troubled with Buboes and Ruptures to beware of running.

It is certain, that, in running, the Inſpiration exceeds the Exſpiration; for the Strength cannot hold out for continuing the Race, unleſs the Air be pened in within the Cavity of the Breaſt: And accordingly we find, that, when the Muſcles are relaxed by much Exſpiration, our Strength ſinks; but, when the Lungs are diſtended and the Breaſt heaved up, the Spring of the Muſcles and Fibres of the whole Body is firm and tight. But if we run long and with too great Violence, the Lungs being full of Air, their Veſicles are blown up, and the Motion of the Blood, from the Right Ventricle of the Heart, through the pneumonic Veſſels, is retarded, by virtue of the Preſſure and Conſtriction of the Ducts; and this gives riſe to Ruptures of the Veſſels, and a Spitting of Blood, as *Galen* ‖ has likewiſe obſerved. The ſame Cauſe gives riſe to aſthmatic Fits, both primary and ſecondary, or con-

* Lib. 8. c. 4. † Lib. 3. c. 53. ‖ 6. Epid. *Com.* 2. *et.* 7. *Meth.*

convulsive; for the sharp Serum, being thrown upon the intercostal Muscles, forces them to a violent Contraction. Hence it is, that now-a-days those who make a Trade of Running are sent to the publick Hospitals at forty Years of Age, as being then past their Labour. In my Opinion, our Footmen, who usually run before the Coaches of Persons of Quality, seem to be in the same Condition with those described by *Ælius Spartanus*, in his Life of the Emperor *Verus*, who tacked Wings to the Shoulders of his running Footmen, and called them by the various Names of the Winds, and inhumanly forced them to run without Interruption; for certainly a servile Necessity has added Wings to their Feet, if not to their Shoulders.

Often our running Footmen have a Swelling in the Spleen; for the loose Substance of this Organ receives more Blood, upon the violent Motion, than it discharges, and so a serous Humour, stagnating in its Cavities, makes a Humour. *Pliny* * writes, that the Ancients used to sear or burn the Spleen of Runners, because it was an Impediment to them in Running. Accordingly the Servant in *Plautus* is brought in, saying, *Perii, sectitionem facit Lien.*

Such are the Disorders intailed upon Running, which are further confirmed and increased by the usual Intemperance of this Sort of Men. They may prevent the Ruptures by wearing Trusses before that common Misfortune befalls them. Their Meagreness and Loss of Flesh may be repaired, not only by a moistening Diet, but by soft and oily Frictions, and Baths when they have Leisure; the same Remedies being likewise proper

* Lib. 11. c. 37. *H. N.*

againſt the Conſtriction of the Pores, which they are liable to, after much Running and Sweating. The Rupture of the Veſſels, and the Spitting of Blood, may be prevented by Bleeding; and, whenever they are taken ill of any conſiderable Diſtemper, Bleeding is never to be omitted; for no Part of their Body is ſo weak or ſo much expoſed as their Lungs: For as *Hippocrates* * ſays, Motion and Running ſtrengthen the Joints, as Idleneſs infeebles them; but it is not ſo with the Lungs, which are heated by the violent Motion, and loſe their natural Spring.

Such are the Remedies and Cautions proper for this Sort of Men; but they never aſk for Advice till they are actually upon a ſick Bed, or brought under ſome of the above-mentioned Diſorders; in the Cure of which it will ſtill be neceſſary to have a Regard to the occaſional Cauſe.

As for the Obſtructions in the Viſcera, and chiefly in the Spleen, after the Uſe of aperient Remedies, ſuch as Chalybeats, Walking will be proper. Thus, when the *Cappadocian* in *Plautus* † complained to *Palinarus*, that her Spleen was broke, he anſwered, *Ambula, id lieni optimum eſt.*

CHAP. XXXVI.

Of the Diſeaſes of HORSE-COURSERS *or* GROOMS, *and thoſe who ride Poſt.*

UNDER the laſt Head we might not have improperly brought in the Grooms, who are employed in breaking and managing Horſes; and pub-

* 9. in 6. Ep. † *Cuvinl. Att.* 2. *Sr.* 1.

public Poſtmen, who ſhift Horſes often; for they are liable to almoſt the ſame Diſorders with the running Footmen: They are ſubject to Ruptures, Aſthma's, and particularly the Sciatica; which, according to *Hippocrates*†, was familiar to the *Scythians*, they being a People who were conſtantly on Horſe-back; for which Reaſon the ſame Author ſays, they were likewiſe unprolific. Continual Riding uſes to burſt the Veſſels of the Breaſt, as *Ballonius* ‖ has obſerved; and likewiſe to injure the Kidneys, inſomuch that often your Horſe-courſers piſs Blood; and ſometimes they are ſeized with a Feebleneſs in the Loins, according to *Hippocrates**. They are likewiſe ſubject to Chops in the Fundament and the Piles, eſpecially when they manage trotting Horſes, and without Saddles; purſuant to that of *Martial* †,

Nam ſolet a nudo ſurgere ficus Equo.

I remember once to have met with a young Equerry, who with much Bluſhing and repeated Aſſurances of his Honeſty, acquainted me, he had been long troubled with a *Sycoſis*, or Fig-like Excreſcence in the Fundament: But I quickly undeceived him, in letting him know, that I had no Suſpicion of his Diſhoneſty, and knew it to be an Infirmity occaſioned by Riding.

They are alſo ſubject to ſordid, obſtinate and callous Ulcers in the Buttocks and *Perinæum*, and Varices in the Legs. *Hippocrates* ‖ relates the Caſe of one who was troubled for ſix Years with a *Hippuris*, a Swelling in the Groins, a Varix, and inveterate Defluxions upon the Hip, or elſe upon-

† *De Aer. Aq. & Loc.* ‖ *Def. med.* p. 81.
* 4. *Epid. n.* 17. † Lib. 14. 84.
‖ 7. *Epid.* c. *finem.*

on the Joints. *Hippocrates* calls the Diſeaſe contracted by Over-riding by the Name of *Hippuris*, *i. e.* a callous Ulcer in the Hips, as *Valleſius* interprets it; ſo many are the Miſchiefs which attend Over-riding: And it were no difficult Matter to ſhew the Ætiology, or Reaſon, of ſuch Accidents; for the violent ſhaking of the Body is able to diſturb the whole Oeconomy both of the ſolid and fluid Parts: All the Viſcera are jolted and jogged out of their natural Situation by the Motion of the Horſe; and at the ſame time the whole Maſs of Blood is diſturbed in its natural Motion. Hence proceed Defluxions or Stagnations of Serum upon the Joints, Ruptures of the Veſicles in the Lungs and Kidneys, and Ulcers and Varices in the Legs, becauſe the Reflux of the Blood is retarded, eſpecially in thoſe who breed or manage Horſes; for they muſt always keep the Muſcles of their Thighs and Legs diſtended, for fear of being thrown: If we conſider how much Strength is required when one ſets a Horſe at full Speed, or manages him to make various Motions and Turns, the whole Body being upon that Occaſion kept in a tonic Action, and the Muſcles ſtruggling much to counterpoiſe one another, we ſhall think it no ſtrange thing, that theſe Men are liable to the Diſtempers abovementioned.

Martianus, that excellent Commentator upon *Hippocrates* * having Occaſion to comment upon the Place where the divine old Father explains what Injuries our Bodies receive from running in a Curve Line, and running round, gives a very good Reaſon why running round is ſo pernicious, by an Inſtance taken from Horſe-courſers; his Words are to this Purpoſe, *The Body is more ſtrained in running round, becauſe then the Bulk and Weight of the*

* 2. *De Diæt. Ver.* 456.

the Body leans only on one Side, with a great Stress, by which Means the Body is much tired; so that this sort of Running exteniuates the Body more than any other. This Truth we find confirmed by the Horse-coursers, who own, that a Horse is more tired by riding one Hour in a circular Way than by running two straight forward; and that these Circular Races are so enervating, that the strongest Horse cannot hold out half an Hour. Those who manage and breed Horses place their chief Diligence, in inuring them to this circular *indefinite* Way of Running, as *Hippocrates* calls it.

I intimated above, from *Hippocrates*, that continual Riding renders Persons frigid and impotent; witness, the *Scythians:* Now I reckon this comes to pass, because the Strength of the Loins and the genital Parts is dissolved by the continual Shaking and Jogging. *Aristotle* * indeed seems to be of another Opinion, for he writes, that Riders are much given to Venery, by reason of the continual Heating and Confrication of the Genitals; but that is to be understood of those who ride moderately, and upon easy Horses: In fine, the Inconveniences and Disorders, which attend much Riding, are very great, especially in riding upon trotting Horses, and the Post-horses; which King *Theodoric* prohibited by an Edict, to be loaded with above an hundred Weight, as reckoning it improper to overload a Creature that was designed for Speed and Expedition.

I do not deny but that moderate and gentle Riding may be very beneficial, and sometimes serve for a Remedy against chronical Diseases; for, according to *Hippocrates*†, easy Riding heats, dries, and

* *Sect.* 4. *Prob.* 12. † 12. *De Diæt. n.* 28.

and extenuates; and *Avicenna* recommends it for promoting Urine, and expelling the Stone in the Kidneys. Among the Moderns, Dr. *Sydenham* * gives great Encomiums upon Riding for Obſtructions of the Liver and Spleen. I remember to have had a young Groom under my Care, who, after recovering of an acute Fever, was ſeized with Obſtructions in the Spleen, and a Tendency to a Dropſy; but cured himſelf in a Month's Time, by returning, upon my Advice, to his wonted Exerciſe of Riding, even when he was very weak.

I ſhall not trouble the Reader with a long Series of the Cures of ſuch Diſeaſes as Grooms and Poſt-boys are ſubject to, ſince theſe are met with in all Practical Authors, who may be conſulted upon Occaſion, a heedful Regard being ſtill had to the occaſional Cauſe, ſo I ſhall only ſtay to offer ſome Cautions, which may be of Uſe to thoſe who ride much. They ought to wear a Truſs, for fear the exceſſive Riding ſhould cauſe a Rupture, by breaking in or relaxing the *Peritonæum*; ſhort Stirrups are certainly the beſt, eſpecially in caſe of a Rupture; if there be any Suſpicion of the breaking of any Veſſels in the Breaſt, or if the Kidneys and Bladder begin to be affected, this Exerciſe muſt be left off; for nothing is more injurious to theſe Parts than Riding.

Ludovicus Corbellus, a *Mirandulan*, who was ſo famous for managing Horſes, that *Philip* IV. of *Spain* ſent for him to be his Equerry; brought himſelf, by over-riding, to thar Condition, that he voided a great Quantity of Blood at the Mouth, and a few Months after was juſt ready to expire, when, of a ſudden, he took a Fancy to have ſome Pork, though he otherwiſe loathed all manner

* *Sect.* 4. *de Colic. Bil.*

ner of Food, and, upon eating of it, thought himself better; after which he prolonged his Life for a Year, by feeding upon boiled Pork and Pig.

CHAP. XXXVII.

Of the Diseases of PORTERS.

IN populous Cities, especially those which lie upon the Sea, such as *Venice*, the vast Confluence of People from several Nations, and the large Quantities of Goods exported and imported, occasion a Necessity for great Numbers of *Porters*; so we come now to see what Diseases are usually incident to these *homines Clitellarii*, as *Plautus* * calls them: The carrying of great Weights upon their Shoulders occasions various, and sometimes violent Disorders; for, being obliged to keep in their Breath by the forcible Action of the Muscles, especially those of the Breast and the Abdomen, they often undergo a Rupture of the Vessels of the Breast; for, when a Porter heaves the Burden first of all upon his Shoulders, he inspires a great deal, and after that expires but little; by which Means the pulmonary Vesicles are so inflated, that the Blood-vessels of the Lungs have not a sufficient Capacity for performing their Office; and thus it is no wonder the over-distended Blood-vessels should be easily broke.

The Tone of the Muscles of the Thorax being broke, and the Structure of the Lungs vitiated, by the same Means, they are apt to be asthmatic; and often the Lungs adhere to the Ribs, by reason of

* *In Mostel.*

of the keeping in their Breath; as I have frequently obſerved in diſſecting their Corps. They alſo uſed to have great Varices in their Legs, the Motion of the Blood upwards being retarded by the Diſtention of the Muſcles of the Thighs and Legs; upon which inſues a Dilatation of the Veins in their Valves. In Proceſs of Time they grow round-ſhouldered, the Vertebræ of their Backs being conſtantly bended forwards, and ſo contracting an habitual Poſture: For, though they are ignorant of the Rules of Mechanicks, Nature has taught them, that they bear Burdens upon their Shoulders better with their Breaſts bended, than when the Body is raiſed upright.

They uſed frequently to be ſeized with Ruptures; for, in keeping in their Breath, the *Peritonæum* is eaſily broken or dilated. *Hildanus* * gives us the Caſe of a Carpenter, who ſtrained himſelf ſo, by lifting a Burden, that his Caul fell down into the Scrotum, and he died in ſeven Days after. The ſucceſsful *Platerus* † ſays, Porters are liable to Phthiſics; and gives Inſtances of a Stone-cutter and others, who, by lifting great Weights, contracted a Spitting of Blood.

Hippocrates ‡ mentions a remarkable Caſe of the like Nature; *A Man*, ſays he, *who lifted up an Aſs upon a Wager, was preſently ſeized with a Fever; on the third, fourth, ſeventh and eighth Days he voided Blood, upon which a Criſis enſued, together with a Looſeneſs.* Since the Fever followed immediately, no Doubt, the lifting of that great Weight was the occaſional Cauſe of the Fever: But *Hippocrates* does not tell us from what part of the Body the Blood iſſued. *Vallæſius* ‖, in his Comment, thinks it iſſued from the Noſtrils, and that there-

* *Cent.* 1. *Obſ.* 72. † *Qu. pat. Q.* 56.
‡ 4. *Epid. n.* 13. ‖ 4. *Aph.* 27.

thereupon the Fever diſappeared, and the Belly became ſoluble; there being an Aphoriſm *, which teaches us, that, when much Blood flows from any Part, the Laxity of the Belly uſes to follow. But we find that *Hippocrates* in his Epidemical Hiſtories, uſes always to add the Word *è naribus* from the Noſtrils. However, let the Blood iſſue from what Part it will, it is manifeſt, that theſe Men are apt to void Blood from the Breaſt, the Noſtrils and the Hemorrhoid Veſſels, upon which heavy Diſorders enſue.

Porters being thus expoſed to Diſorders from their Way of Buſineſs, it will be of uſe to Practitioners to know their peculiar Diſeaſes, and proceed with uſual Caution in having an Eye upon the occaſional Cauſe. Conſidering that they uſe to provide for the Strength of their Bodies by hearty Feeding, as the Wreſtlers did of old; Bleeding ought to lead the Van in the Preſcriptions made for them; and that ought to be followed by ſuch Things as cleanſe the Stomach; and the Remedies calculated for Laſſitude and Tiredneſs, ſuch as Baths, Lotions, and the like. In regard they are apt to have Ruptures, they ought to wear Truſſes by way of Precaution, and not try with one another who ſhall carry moſt, leſt the ſame Fate befall them which happened to the Man mentioned by *Hippocrates*, who lifted up the Aſs upon a Wager.

Here we ſhall take occaſion to propoſe that mechanical Problem, Why Porters carry Burdens upon one of their Shoulders with their Bodies bending forwards, better and eaſier than when they ſtand upright; eſpecially conſidering that one would think they ſhould carry them with more Strength and leſs Danger of falling when they ſtand ſtraight; as Pillars and Poſts bear vaſt Weights when

* *Sect.* 4. *aph.* 27.

when they ſtand upright, and Women who carry huge Weights upon their Heads for ſeveral Miles, walk always upright, taking Care not to depart from a perpendicular Line, for fear of falling under the Weight: Perhaps the Reaſon is, in the erected Poſition of the Body the Weight would preſs upon the ſmall Bone called the Clavicula or Channel Bone, and that in the middle more than the ends, ſo that it might eaſily be broke; whereas in a Poſture bending forwards, the Weight leans upon the Shoulder-blade, which is a broad, large, and ſtrong Bone, ſo neither ſuffers ſo much by the Preſſure, nor is ſo apt to be broken. To confirm this Conjecture we obſerve, that a heavy Body is born with a leſs painful Preſſure by the whole Hand, than by one Finger; and that a Ball of Gold of one Pound weight placed in the Palm of the Hand, makes a greater Senſe of Preſſure, than a Wooden Ball of the ſame Weight, becauſe the Ball of Gold, being of a leſſer Dimenſion, exerts all its Force upon the Parts which lie under it, and theſe are fewer than thoſe poſſeſſed by the Wooden Ball. Now the Weight, leaning upon the Porters Shoulder in a bending Poſture, reſts not only upon the ſtronger Part, but upon more Parts of the Body than it would if the Body were erected, whether the Weight be ſolid, as Wood, or flexible, as a Sack of Wheat; and thus the Burden is borne with more Eaſe: Purſuant to which Rule, as ſoon as the Weight is raiſed upon the Porters Shoulders, they preſently bend their Body forwards, and ſhoot their Buttocks backwards, that the Center of Gravity may continue in the Line of Direction. I obſerved at *Venice* and *Ferrara*, that the Porters carry Sacks of Wheat not upon one Shoulder as our Porters generally do, but upon the Neck and Vertebræ of the Back, ſo

that

that the Weight rests upon the whole Length of the Back, by which Means, they say, it presses less than if it were carried upon one Shoulder; pursuant to that Saying of the Poet, *Leve fit quod bene fertur onus.* As for the Women who carry great Weights upon their Heads, they are obliged to go upright, for if they bent their Head, the Weight, being thereby put out of the Line of Direction, would necessarily tumble down. The Reason why they carry these great Weights, with so much Ease and Agility, is, because they rest directly upon the Skull, which is a strong and vaulted Bone, and upon the Vertebræ.

CHAP. XXXVIII.

Of the Diseases of WRESTLERS.

THOUGH the Vicissitudes of Time have brought into Disuse many Institutions of the Antients, and particularly the Shows of Wrestlers and Fencers, which went by the Name of Games and Shows, as if the Butchering of Mankind had been so diverting a Sight; yet we think it not improper to insert a few Remarks of the Wrestlers and their Diseases, from whence it will at least appear how accurate the antient Physicians were in examining and curing the Diseases of Tradesmen. The greenest Novice in the Way of Physic, cannot but have heard of that Oracle of *Hippocrates*'s, *Habitus exercitatorum*, *&c.* the genuine Exposition of which has been so variously and artfully pursued by so many Commentators, to whom I dare not pretend to add any thing after the Essay

of

of the learned *Tozzius*, Phyſician to his Holineſs, in which he offers a juſt and ſolid Interpretation of the Aphoriſms of *Hippocrates*, according to the Doctrine of the Moderns.

In antient Times the public Shows were ſo frequent, that the Wreſtlers and Champions were very numerous; for their Office was not reckoned a ſervile Exerciſe, but free-born and noble Youths were bred up to various Sorts of Exerciſe. Hence *Parmenio* in *Terence* *, proferring a Youth to *Thais*, commends him for being verſed in the *Palæſtra*, as well as Letters. It is manifeſt therefore, that the Phyſicians had frequent Occaſion to have Wreſtlers under their Care. Now the Diſeaſes to which they were uſually ſubject, were Apoplexies, Swoonings, ſuffocating Catarrhs, Ruptures of the Blood-veſſels in the Breaſt; and oftentimes they died ſuddenly. The principal Cauſe of theſe Diſeaſes was the great Plenty of Humours and Diſtention of the Veſſels, by which Means the Motion of the Blood was either mightily retarded or quite ſtopped, and thereupon enſued a Stagnation of the Blood, and of all the Fluids; the neceſſary Conſequence of which is ſudden Death. And this happened the more frequently, becauſe they uſed to prepare themſelves for Wreſtling by Idleneſs and high Feeding; for *Hippocrates* affirms †, that it is more dangerous to turn from Idleneſs to Exerciſe, than from Exerciſe to a ſlothful Life: For in violent Exerciſes the Blood is ſo very much heated and rarified, that it does not paſs ſo readily from the Arteries into the Veins, as it does through the Arteries, eſpecially when the Veſſels are very full.

Hippocrates ‡ has given us a full Account of their

* *In Eunocho.* † *De rat. Vict. in ac.* n. 24.
‡ 5. *Epid.* n. 27.

their Way of Feeding in his Hiſtory of *Bias*: *Bias*, ſays he, *the Champion, being naturally a great Eater, happened to be ſeized with a choleric Illneſs; voiding Bile both upwards and downwards. This Illneſs he owed to the eating of Fleſh, eſpecially Pork not well done, to the exceſſive drinking of ſweet Wines, and to the eating of Tarts, and Cheeſe-cakes prepared with Honey, Cucumbers, Melons, Milk and Barley-flour.*

Such was the Diet of theſe Champions, by which they procured hale and robuſt Conſtitutions. *Ariſtotle* * affirms, that they underwent ſeveral Shapes and Aſpects, becauſe they could not digeſt and make an equal Diſtribution of that Variety of Food which they uſed; and *Plato* † juſtly brands them for a ſluggiſh, heavy-headed, and giddy Sort of Men.

Galen ‡ likewiſe cenſures this Profeſſion in ſeveral Places, as being injurious both to Body and Mind; and it is poſſible his own Experience had taught him ſo much, as we may gather from his own Words; for he ſays himſelf ‖, that, when he lived at *Rome*, he was tempted in the thirtieth Year of his Age to liſt himſelf among the Champions, and diſlocated his Shoulder to the great Danger of his Life; for he was under great Apprehenſions of Convulſions, inſomuch that he was obliged to bathe the diſlocated Part Night and Day with hot Oil, and lie naked upon an Animal's Skin in the Dog-days.

It is well known what Means the antient Phyſicians uſed for the Champions; copious Bleeding was the chief Remedy; not that they meant thereby to prepare the Body for farther Nutrition, but to

* 4 *De gen. anim.* c. 3. *et* 8. *Polut.* † 3. *de Rep.*
‡ *Suas. ad Long. Act. et l. ad Thra. ſib.* ‖ *Com.* 1. in *l. de Artic. n.* 60.

to retrieve the Motion of the Blood, which, being intercepted in the Veſſels of the Lungs, or the carotid Arteries, might have occaſioned ſudden Death. They likewiſe exhibited ſtrong Purges, and preſcribed a very ſpare Diet when the Diſeaſe intermitted, together with many other Meaſures both for Cure and Preſervation.

The Maſters of the Games uſe to prohibit the Wreſtlers the Uſe of Venery, for fear of enervating their Bodies; nay, they uſe to padlock and button up their Privities. Hence *Martial* * in his Epigram upon *Menophylus*, the *Jew*, ſays,

Delapſa eſt miſero fibula, verpus erat.

But after all, too long an Abſtinence from Venery joined to high Feeding, made them ſometimes too lazy and ſlothful; upon which Occaſions, *Pliny* ſays †, they uſed to take off the Padlock, and recover their wonted Briſkneſs and Agility, by permitting the Uſe of Venery: For, as *Celſus* ſays ‡, Venery ought neither to be too eagerly deſired, nor too nicely avoided; if it be repeated but ſeldom, it chears and rouzes the Body, but the Frequency of it diſſolves the Conſtitution. In like manner *Hippocrates* ſays ‖, Labour, Meat, Drink, Sleep, and Venery, ought all to be uſed with Moderation.

CHAP.

* Lib. 7. † Lib. 28. c. 26. *H. N.* ‡ Lib. 1. Chap. 1. ‖ 6. *in 6. Epid.*

CHAP. XXXIX.

Of the Diſeaſes of thoſe who work upon MINUTE THINGS *which ſtrain the Eyes.*

THERE are ſome Tradeſmen employed in the finer and ſmaller Sort of Workmanſhip, ſuch are Goldſmiths, Watchmakers, Painters, I mean thoſe who paint upon Jewels, and Writers, ſuch as he who wrote *Homer*'s Iliads in the Compaſs of a Nut-ſhel, as *Tully* informs us *. The Misfortune entailed upon thoſe Men from their Buſineſs, beſides the Inconveniencies of a ſedentary Life, is that common Diſeaſe of the Eyes, called *Myopia*, in which the Objects are not ſeen, unleſs they be placed near the Eye; and accordingly we ſee moſt of theſe Tradeſmen uſe Spectacles at Work. *Welelius* † makes mention of this Sort of Tradeſmen in a particular Manner, and ſays, they are weak-ighted, becauſe it is uſual for the Parts which are moſt exerciſed to be moſt weakened. But we may draw a better Reaſon for this Weakneſs of the Eyes from the Principles of the Optics.

I was always of the Opinion, that nothing can illuſtrate the Manner of Viſion, but a dark Room, in which the Images of external Things are repreſented upon a white Linnen-cloath; which Thought we owe firſt to *Platerus*‡, and then to *Plempius* in his *Opthalmographia*. For if we place a convex Glaſs in the Hole of a dark Room, the nearer the Object approaches to the Hole, the further muſt the Cloath be removed from the Aperture, to make

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* *Vid. Plin. l.* 7. c. 21. † *Path. Dogm. Sect.* 2. c. 10. ‡ Lib. 4. *Prob.* 39.

a diſtinct Repreſentation of the Object: And, on the other hand, the further the viſible Object is removed, the nearer muſt the Cloath be brought to the Hole, otherwiſe, the Repreſentation will be confuſed; for the diſtinct Images of Things are drawn, as it were, with a Pencil only in the Point where the Rays join. From hence it appears, that the Eye, which is of a finer and more admirable Structure, cannot diſtinctly ſee Objects at a Diſtance, and near at Hand, unleſs it be moveable, and apt to change its Figure; ſo that, either the Net-like Coat, or the chryſtalline Humour, may be eaſily moved. Common Experience teaches us, that, when we view Objects at a Diſtance, and do not perceive them clearly, becauſe the Rays, entering the Eye, almoſt parallel, meet too ſoon behind the *Pupilla*, we can, by ſtraitening and contracting the Eyes, by the Means of the Muſcles and the Eye-lids, ſo alter the Figure of the Eyes, as to have a clear and diſtinct Perception of the Objects, which otherwiſe we ſaw but confuſedly.

Now thoſe, who work all Day long upon very fine and ſmall Work, cannot have a diſtinct View of the minute Objects before them, without keeping their Eyes very ſteddy and intent, and fixed with a tonical Sort of Motion, or a Motion always directed to one Point; and conſequently, though their Eyes are naturally moveable, that being a neceſſary Quality for perceiving Objects at a Diſtance, as well as near at hand, yet, by keeping the Eye conſtantly in this one Poſition, they contract ſuch a Habit, that the *Retina*, being inured and accuſtomed to one Form and Figure, perſiſts in it, and cannot be moved at Pleaſure for the Perception of remoter Objects: And it is for this Reaſon, that ſuch Tradeſmen are almoſt all of them troubled with a *Myopia*.

Had

Add to this, that, while the Eyes are kept immoveable, and perpetually fixed upon one Point the Humours grow thick, and lose their Transparency along with their Fluidity, which gradually makes way for a Weakness of the Sight; so that, though such Tradesmen may naturally have nimble and clear-sighted Eyes, they become short-sighted in Process of Time.

So great is the Calamity entailed upon this Sort of Work, and the finest Pieces of Workmanship, such as Clocks and Watches, are so apt to produce this Weakness of the Eyes, that many of the Workmen are almost blind before they arrive at old Age. I know a *Jewish* Woman in this City, who had a peculiar way of stringing of Pearl, and that so artificially as to cover their Blemishes, if there were any, and by this Means got a great deal of Money: But when she came to be forty Years of Age, finding no manner of Relief from Spectacles, she was forced to leave off the Business. I remember likewise to have heard several Printers complain, that they have given a considerable Shock to their Eye-sight, by Composing small Types.

In earnest, I do not see how we can afford any Relief to the Workmen we now treat of; for it is not easy to persuade them to leave a beneficial and lucrative Trade; and Physic is unprovided with any Remedy which can restore the primitive Strength and Mobility of the Eyes, after the Disorder is become inveterate; for neither Purging, nor Bleeding nor the other medicinal Means can take place in this Case, in regard the Patients are otherwise well and brisk, and their Spirits being neither clouded nor incrassated, it would be impro-

per to puniſh an innocent and ſound Head with the Commotions of Medicines.

However, I would adviſe ſuch Workmen not only to uſe Spectacles, but to intermit from their Work now and then, and refreſh their Eyes with Diverſity of Objects. For we cannot imagine how much the Mobility of the Membranes of the Eyes, and the native Fluidity of the Humours is kept up by viewing different Objects, ſome near at hand, ſome remote, ſome directly, others obliquely, and in fine, all manner of Ways; For by this Means the natural Diſpoſition of the Eye is preſerved, ſo that the Ball is ſometimes furled or contracted, and ſometimes dilated; and the chryſtalline Humour approaches more or leſs to the *Pupilla*, according as the Remoteneſs or Nearneſs of the Object requires. Without this Diverſity of Action, the Eyes undergo the ſame Fate with the other Parts, which by being long detained in one Poſition, grow ſtiff and unfit for Motion. Of this we have a manifeſt Inſtance in thoſe, who, upon coming out of dark Priſons, where they have been long kept, are forced to accuſtom their Eyes gradually to the Light, becauſe the *Pupilla* or Ball of the Eye having been long dilated, and its elaſtic Spring weakened, it forgets, in a manner, how to contract itſelf as it uſed to do.

CHAP.

CHAP. XL.

Of the Diſeaſes of MUSIC MASTERS, SINGERS, *and others of the like Profeſſion.*

THERE is no Exerciſe, though never ſo healthful and innocent, but what may produce great Diſorders, if it be uſed with Intemperance; witneſs the ſad Experience of Muſic Maſters, Singers, Preachers, Monks, Nuns, (who ſing perpetually in the Churches) Hawkers, Cryers, Clerks, Philoſophers who diſpute warmly in the Schools, and all others whoſe Profeſſion obliges them to exerciſe their Voices. Theſe Men uſe generally to be ſubject to Ruptures, unleſs they be Eunuchs; for, by prolonging and confining the Expiration of the Air, in forming their Voice or making Rehearſals, both the Muſcles of the Abdomen ſubſervient to Reſpiration, and the *Peritonæum*, contract a Laxity, upon which a Rupture in the Groin readily enſues, juſt as we ſee overcrying and Bawling make Tumours in the Groins of Children. *Fallopius* * took notice of this Accident chiefly in Singers and Monks. Our Singers who ſing the Baſe, and our Friars, are generally burſten, by reaſon of their continual crying and ſtraining the Voice, in which the Muſcles of the Abdomen are employed. In like manner *Mercurialis* ſays †, our Modern Singers are ſubject to Ruptures, whereas the Antients were not, becauſe they made frequent Uſe of Baths, by virtue of which the *Peritonæum*, the *Scrotum*, and the little

* *Tom.* 3. *de Hern.* 21. † Lib. 6. *Gymn.* c. 5.

Cells of the Teſticles, were moiſtened, ſo as to be extended with more Safety, and be better guarded from breaking or burſting. And in my own Practice, I have met with more Ruptures among the Nuns, than among other Women; which I impute to their frequent Singing.

* *Mercurialis* in his *Gymnaſtica* obſerves, that an acute ſhrill Voice cauſes Diſtentions of the Head, Palpitations of the Temples, Pulſations of the Brain, Inflations or Swellings of the Eyes, and a Tingling in the Ears, which are not obſerved to follow a deep, baſe ſort of Voice: For, in forming the acute or ſhrill Sound, and ſuſpending it for a long time, there is a Neceſſity of a great Inſpiration of Air, and keeping in the Breath, as one may experience in ſinging over a muſical Scale; for when you come to the uppermoſt Note, there's a Neceſſity of diſtending all the Muſcles both of the Breaſt and the Abdomen, by which Means the Reflux of the Blood is retarded; and hence ariſes a Redneſs in the Face, Pulſation of the Temples, and the other above-mentioned Symptoms. For the ſame Reaſon Singers are oftentimes hoarſe, and affected with violent Rheums, the Lymph being too plentifully expreſſed from the ſalivary Glands.

Being acquainted with *Margarita Salicola Scevina*, the famous Singer at the Opera's at *Modena*, I have heard her ſay, that ſhe is frequently ſeized with a Hoarſeneſs after ſinging long at a Time. But the ſtrangeſt Thing of all is, that, when this Woman is in a perfect State of Health, ſhe can throw out of her Mouth at Pleaſure a great Quantity of groſs Lymph, and that in a Moment of Time as it were; which can only be owing to the violent tuning of her Voice. She informed me fur-

* Lib. 6. c. 5.

further, that, upon ſinging long with open Mouth upon the Stage, without breathing in freſh Air, ſhe uſes ſoon after to be ſeized with a Vertigo.

Since Singing therefore and Speaking loud are ſo apt to infract and diſorder the Head, the Phyſicians have Reaſon to prohibit Talking and Reading, during the Pains and other Diſorders of the Head.

I am truly of Opinion, that no manner of Exerciſe heats the Body more than that of the Voice; for we ſee the Pulpit-men are all in a Sweat before they can deliver one Hour's Diſcourſe: Nay, it is poſſible, the Lungs may undergo more Fatigue and Labour in this Exerciſe, than in Running, by reaſon of the unequal Tenour of Reſpiration which attends Singing, Rehearſing, Reading; and the Pronunciation being ſometimes ſharp, and ſometimes ſlack and low, as the Nature of the Subject requires. It is no Wonder then, that theſe People are apt to be ſhort-breathed, and ſometimes throw up Blood upon the breaking of ſome Veſſel in the Breaſt; which Accident I lately met with in an eloquent Orator, who after recovering of a ſevere Fit of Sickneſs, ventured to pronounce a Panegyric before his Health was confirmed, and thereupon voided a great Quantity of Blood at the Mouth.

Pliny * has a noble Epiſtle, which is very well worth reading, in which he recommends to *Paulinus*, *Zoſimus* his manumitted Servant, who was very ill of a Spitting of Blood, and apprehenſive of a Conſumption of the Lungs: He acquaints him, that *Zoſimus* was inſtructed in ſeveral Arts, particularly in Reading and Rehearſing; and that, after Speaking loud he fell into a Spitting of Blood, of which he was cured in *Ægypt*; but upon his

* Lib. 5. Ep. 19.

Return relapſed again, after ſtraining his Voice for two Days together, the Evacuation being uſhered in by a gentle Cough. To conclude, he adds, he had ſent this his Servant to *Plautinus*'s Country-houſe in the *Forum Julii*, for the ſake of the Air, and begs he may be made welcome.

To this purpoſe is that golden Saying of *Hippocrates* *, *All Straining of the Voice, whether in Speaking, Reading, or Singing, puts the Soul* (*Anima*) *in a Commotion* : But the Queſtion is, whether *Hippocrates* meant by the *Anima* the Blood itſelf, in regard the Exerciſe of the Voice puts the whole Syſtem of the Blood into violent Commotions: It it is the common Opinion indeed, that the Blood is the Seat of the Soul ; nay, it is manifeſt, that the Blood uſes to be taken for the Soul itſelf, as in *Virgil* †.

Purpuream vomit ille Animam———

Certain it is, that Singing puts the Maſs of Blood in ſuch a Heat, by the Confeſſion of the Muſicians themſelves, that, when they go off the Stage, they often piſs Blood. But after all, it is more probable, that, by *Anima*, he meant, the Breath, which we ſuck and expel by Inſpiration and Exſpiration. For there is no manner of Exerciſe, which affects and Diſorders the Organs of Reſpiration more, nor indeed ſo much, as the Exerciſe of the Voice. We all know that Saying of *Plautus* ;

Fœtet anima uxoris meæ,

my Wife's Breath ſtinks.

To

* 2. *De diæt.* n. 26. † *Æneid.* l. 9.

To this Class belong those who play upon Trumpets, Flutes, Pipes, and in general all who sound with distended Cheeks; for the violent Imprisonment and Struggling of the Breath in sounding a Trumpet or Flute, occasions not only the above-mentioned, but even greater Disorders; such as Ruptures of the Vessels in the Breast, and sudden Evacuations of Blood at the Mouth. *Diemerbroeck* * in his Observations, has a terrible Instance of a Trumpeter, who by over-straining himself to sound beyond others, broke a large Vein in the Lungs, upon which he had a copious Efflux of Blood, and expired two Hours after.

As for the Remedies calculated for the Disorders above-mentioned, a Truss ought to be wore by way of Precaution, as well as Cure of the Rupture; for all the other Remedies against Ruptures, such as Frictions, Cere-cloaths, and Plaisters, are ridiculous. To preserve the Voice, or take off the Roughness of the Throat, Baths of sweet Water are very serviceable, as well as the taking of Cyprus Turpentine, and the Syrup prepared from it. *Galen* † cries up Baths beyond all other Remedies: *Those*, says he, *who hurt their Voice by over-straining it, such as Musicians, Preachers, and Actors, make much use of Baths, and feed upon gently laxating Food.* When the Breast is threatened with Injury, which may be predicted from a slight Cough, and the Habit of the Body, we must endeavour to persuade them to leave off this Sort of Business.

* *Obs. Med.* 56. † 7. *De comp. med.* 2. *loc.* c. 1.

CHAP. XLI.

Of the Diſeaſes of HUSBANDMEN.

THAT Saying of the Prince of Poets,

O Fortunatos nimium, ſua ſi bona norint,
Agricolas, ———

ought probably to be underſtood of that antient Race of Mortals, who manured their domeſtic and patrimonial Lands with their own Cattle; and not of the Huſbandmen we have now, who are obliged to encounter endleſs Labour and extream Poverty in manuring other Men's Grounds. However, the uſual Diſeaſes among the *Italian* Farmers, eſpecially thoſe on the two Sides of the *Po*, are Pleuriſies, Peripneumonies, Aſthmas, Cholics, St. Anthony's Fire, Inflammations of the Eyes, Quinſeys, Tooth-achs and Rottenneſs of the Teeth. Theſe Diſeaſes may be imputed chiefly to two occaſional Cauſes, the Air, and their Diet: For their Buſineſs expoſes them to all the Inclemencies of the Air; they are bound to encounter ſometimes the South and ſometimes the North-winds; ſometimes they are ſoaked in Rains, or the Night-dews, and at other times they are ſcorched with the Beams of the Summer-ſun; and, let their Conſtitutions be never ſo robuſt and brawny, they cannot ſuffer ſuch great Alterations without Damage, by being one while chilled with Cold, and at other times covered with Sweat, to all which they add a foul coarſe Diet, ſo that they

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cannot but gather a Crowd of groſs and glutinous Humours, which produce theſe Diſeaſes. For a febrile Efferveſcence being thus excited in the whole Maſs of Fluids, the groſs and viſcid Humours are apt to ſtagnate in the Veſſels of the Lungs, to which the whole Maſs of venous Blood repairs; ſo that, purſuant to frequent Obſervation, when any epidemical Affection of the Lungs begins to rage, it makes its firſt Aſſault on the Country People, and ſweeps off great Numbers of them. For the ſame Reaſon, they are frequently troubled with Colics and hypochondriac Diſorders, which they call *il mal de Padrone*, from its reſemblance of the hyſteric Paſſion: For their groſs and viſcid Aliment produces a Redundance of pituitous and acid Juices in the Stomach and Inteſtines; and thence proceeds the Griping and Diſtention of the Inteſtines.

But as Huſbandmen follow various Sorts of Work, according to the Diverſity of the Country, and of the Seaſons of the Year, they uſed to be troubled, in Winter and the beginning of the Spring, with the Diſeaſes of the Breaſt, Defluxions upon the Eyes, and Quinſeys, the Cauſe of which Diſorders, as I intimated above, is the Groſſneſs and Viſcidity of the Blood, which render its Circulation ſlower, and diſpoſe it to Stagnations and Inflammations in ſeveral Places: For the Blood, drawn from their Veins in that Seaſon, is ſo thick, that it reſembles Bees-wax both in Colour and Conſiſtency.

I do not believe, that, in any Set of Men the Blood undergoes a greater Change in a ſhort time, than it does among the Boors and Country People; for thoſe very Perſons, whoſe Blood, drawn from the Veins in the Spring, is thick and glutinous, have a lively florid Blood in the beginning of Summer,

when they are ſeized with any Diſorder: So great is the Influence of Exerciſe and Labour, that it readily turns the Maſs of Humours to a contrary Craſis, which is not obſerved among the Inhabitants of Towns.

I have made one Remark, which is curious enough, in our Farmers Families, eſpecially in their Children; which is, that theſe Children, being for the moſt part under ten Years of Age, are ſeized about the vernal Equinox, with ſuch a Dimneſs in their Sight, that they run up and down all Day long as if they were blind; but, upon the Approach of Night they ſee very well. Now this Diſorder goes off of itſelf, without the Aſſiſtance of any Remedy; for, about the middle of *April*, they become as well as ever. Upon ſuch Occaſions I have often taken a narrow View of theſe Childrens Eyes, and found the *Pupilla*, or Ball, much dilated, which Diſorder the Phyſicians call by the Name of *Mydriaſis*, though Authors differ in their Thoughts of the Cauſe of it, as you may ſee in *Sennertus*, *Riverius*, and *Platerus*.

Gorræus * ſays, this Diſtemper is not much different from the Reſolution of the *Pupilla*; and indeed it ſeemed to me, that the Rays of the Sun in *March* might make ſome Colliquation in the Brain and optic Nerves, by which means the Tone and Spring of the Coat, called *Uvea*, may be ſo reſolved, that it becomes flaccid.

Theſe Children live all Winter in very hot and moiſt Huts; and when the Winter is broke, that is, about the vernal Equinox, they peep out of their Dungeons, and expoſe their bare Heads to the Sun-beams, upon which a Fuſion and Colliquation of the Humours may readily enſue; and from thence proceeds the Dilatation of the Eye-ball, and

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* *De ſin. me.*

a Weakneſs of Sight, by reaſon of the Admiſſion of an exceſſive Quantity of Light: But, towards the End of *April*, the Sun-beams, being more effectual, diſcuſs the Humours which had thus fallen upon the Coats; and, the *Pupil* being reſtored to its natural Tenſion and Lightneſs, the Eye-ſight is recovered without the Intervention of Remedies.

In Summer our Farmers are ſeized, not unfrequently, with acute and ardent Fevers, eſpecially about *July*; and in the Autumn they are ſubject to Dyſenteries, the Cauſe of which is to be imputed to the Eating of Summer-fruit, and other Errors in the Way of Diet. Many of their Women, being commonly employed in the Autumnal Seaſon, in ſteeping Hemp and Flax in Lakes and Pools, where they ſtand wet up to their Middles, wading to cleanſe it and pull it out, are thereupon ſeized with acute and mortal Fevers, which are owing not only to the Conſtriction of the Pores and Want of Tranſpiration, but likewiſe to the horrid ſtinking Damp which quite ſinks the animal Spirits, and upon ſuch Occaſions annoys all the Neighbourhood. This certainly is the Seaſon in which our Townsfolks ought to be moſt cautious of the Country Air; for then every Village is tainted with that ugly Damp; and *Kircher* * aſſigns this alone for the Cauſe of diſmal Plagues in ſome Cities. The Virulency of the Steams, which riſe from the Water in which Hemp is ſteeped, is ſufficiently ſet forth by *Schenckius* † in his Obſervations, *Petrus a Caſtro*, *Simon Pauli* and others: And as for the Influence of Odours or Smells upon our Conſtitutions, we need go no further than to our hyſteric Women, to be fully convinced of it.

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* *Scrut. Peſtif. Sa. 1. Sect. 1.* † Lib. 7. Ob. 3 *de Febr. Punctic. Quadrip. Ber.*

Another thing which contributes not a little to the Diſeaſes of Boors, is their ſlothful Careleſneſs in heaping up the Dung, deſigned for improving their Grounds, juſt before their Cow-houſes, Hog ſties, and the very Doors of their dwelling Houſes keeping it there for a Noſegay all Summer; for at this rate the Air they live in muſt needs be polluted with the foul Steams which riſe inceſſantly. Upon this Conſideration *Heſiod* was againſt the Dunging of Grounds, and thought it more convenient to promote the Healthfulneſs of the People, than the Fertility of the Ground.

P. Zacchia * obſerves, that Gardeners are oftentimes troubled with Cachexies and Dropſies; for, being obliged to live in moiſt Places, becauſe Gardens want to be often watered, their Bodies muſt needs imbibe a great deal of Humidity. I remember I once cured a Gardener of a Palſey, who had loſt the Motion and retained the Senſe of one of his Legs, and in the other retained the Motion but was deprived of the Senſe. This Man was recovered with the Decoction of *Guaiacum*, and many other Remedies, after being ill many Years.

In *Hippocrates* † we meet with a Hiſtory that runs thus; *He, that lay ill in* Dealcles's *Garden, had been affected a long time with a Heavineſs and Stuffing in the Head, and a Pain in the right Temple; and at laſt, being ſeized with a Fever, was forced to take his Bed.* In commenting upon this Caſe *Galen* is very ſevere upon *Sabinus*, becauſe *Hippocrates*, by mentioning the Garden, meant to point at the Cauſe of the Diſeaſe; for *Galen* condemns the Air of Gardens by reaſon of the Dung, and the unfavourable Exhalations of Trees, ſuch as Box, and of ſuch other Plants.

Thoſe

* *Q. m. L. l.* 5. *Tit.* 4. *Q.* 7. † 3. *Epid. ægr.* 3.

Thoſe who live near Meadows are likewiſe liable to the ſame Diſorders; for there riſes generally an unwholſome Air from Meadows, for the Reaſons mentioned above. Hence the Lawyers ſay, a Man may enter an Action againſt a Neighbour who offers to turn tilled Lands into Paſture-grounds. *See I. Pratum de Rer. Verb. Signif**. And accordingly we find, that Hay-mowers and others concerned in the Culture of Meadows, are ſubject to various heavy Diſeaſes.

But now the Queſtion comes, How Huſbandmen, who are ſo neceſſary to the Commonwealth, ſhall be relieved by Phyſic? In Anſwer to which, it is certainly in vain to offer any Cautions by way of Preſervation or Prevention; for they ſeldom conſult Phyſicians upon that Head, and, if any Phyſician gives ſuch Advice, they are not likely to obſerve it: So all I can do is to ſubjoin ſome Remarks to be obſerved in the Cure, when they are brought from the Country to our Hoſpitals in Town, or when they are of the richer Sort, and can afford to ſend for a Phyſician.

In the firſt Place, when theſe People are ill of Pleuriſies, or the Diſeaſes of the Breaſt, we ought not to bleed them ſo liberally as we do the Inhabitants of Cities and Towns; for their Bodies, being worn out with conſtant Labour, are eaſily enfeebled; and beſides, the whole Syſtem of their Blood is of a gelatinous Conſiſtence, and robbed of the volatile Parts; ſo that, when a large Quantity of Blood is drawn forth, their Strength ſinks, and is not ſufficient to maſter the Diſeaſe by Expectoration. I know very well, that ſome think we ought to bleed the more liberally when the Blood is ſo thick, in order to put it into Motion,

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* *Zach. l. citat.* n. 14.

as they ſay; but this is a random Aſſertion: I would adviſe ſuch People to conſult the learned *Bellini* *, and ſee what Cautions are required for the drawing of Blood by Veneſection: For certain it is, that the Blood does not move of its own Accord, or by the Force of its own Gravity, but by the Impulſe of the Spirits with the Intervention of the Motion of the Heart; ſo that, when the Spirits are caſt down and ſunk, the Blood is ſo far from being put in Motion, that a Stop is rather put to its Circulation.

Ballonius † puts the Queſtion, Why the Bodies of Servants, which are otherwiſe hard, compact and ſolid, and more healthy than thoſe of Children, are yet more weakened with Purgation and Bleeding, in Time of Sickneſs, than other opener and ſofter Bodies? To ſolve which he offers ſeveral Reaſons, the principal one is, that their Bodies, being thick and diſtended by hard *Viſcera*, are not ſo eaſily moved by Purgatives, nor ſo much benefited by Bleeding. Now the ſame may be applied to Farmers and Country-people. *Hippocrates* ‡ deſcribes a certain Seaſon, in which Servant-maids who were ſeized with Quinſeys, died; but the young Women who were free and lived upon their own, recovered: So that we ought to form our Judgments of Diſeaſes and their Cures, not only by the Habit and Conſtitution of the Body, but by the Condition of Life and Way of Buſineſs.

Thus we find a great many Errors committed in preſcribing for this Sort of People, upon the Preſumption that their robuſt Conſtitutions will bear ſtronger Remedies than the Inhabitants of Towns. I am often moved with Compaſſion, when I ſee the poor Country-people brought in to the

* *De Sang. Miſſ. Prop.* 6 † Lib. 1. Eph. p. 96.
‡ 7. *In* 6. *Epid.*

the public Hoſpitals, and committed to the Care of young Phyſicians juſt come from the Schools, who utterly exhauſt their Strength with ſtrong Cathartics and repeated Phlebotomy, without any regard to their being unaccuſtomed to ſtrong Medicines, and enfeebled with Labour and Fatigue: And it is for this Reaſon, that many of theſe poor Wretches chuſe rather to die peaceably in their Country-huts, than to loſe their Lives in the Hoſpitals after the Oppreſſion of Bleeding and Phyſic. As ſoon as Reaping is over in the Country, the Hoſpitals of *Rome* are crowded with Reapers and Day-labourers; and it is a doubtful Queſtion, whether the Surgeon's Lancet, or the Sickle of Death cuts off moſt Reapers.

I muſt ſay, I have often wondered how ſeveral Country-people get over acute Diſeaſes, not only without the Aſſiſtance of any Remedy, but even in the midſt of their high Feeding; for, though they are poor, when any one is taken ill, the Neighbours come all a viſiting, and bring with them Eggs and Pullets, of which they make Diſhes; and by that means either elude the Shock of the Diſtemper, or haſten their Exit out of a Scene of Miſery: And, in Alluſion to this Cuſtom, we have a common Saying, That the Country-people go to the other World with their Bellies full; whereas the Town's-folks are ſtarved with Abſtinence, and worn out with Torture of Phyſic, when they undertake that Journey.

But, when theſe People begin to recover, they return to their uſual Way of Feeding, upon Garlic and Onions, which they value as the choiceſt Food: Now, I am apt to believe this ſharp Aliment may ſupply the room of Medicines; for their Stomach, and indeed the whole Maſs of Blood, inclines to an Acidity, eſpecially in the Autumn after

after the Fatigue of their Labour, Onions and Garlic, like antiſcorbutic Medicines, will ſerve to diſſolve the glewy Thickneſs, and temper the Acidity. I know a great many of them who have cured Quartan Agues in the midſt of Winter, with the uſe of Garlic and Onions, with generous Wine.

Galen * gives the Hiſtory of a Country-man who was ſeized with a Cholic, and preſently girded himſelf tightly about, and eat Garlic with Bread; upon which, continuing at his wonted Work all Day long, he was freed of the Cholic: *So that Garlic* (ſays *Galen*) *may juſtly be called the Country-folks* Theriaca; *and whoever prohibits the* Thracians, *or the* Gauls, *or the Inhabitants of cold Countries, to eat Garlic, does them no ſmall Injury.* Another Remedy, which our Country-people cure the Cholic with, is, a Cataplaſm made of bruiſed Leaves of Ground-pine, with the Yolks of Eggs, and applied to the Belly.

Hippocrates † has a pretty Sort of a Caſe, which he relates in theſe Words: "Changes of Paſture "alſo afford Relief to the Patient on ſome Occa- "ſions, as happened to the Man who wreathed "and platted Twigs, for being obliged to keep "his Bed on Account of the Pain, he emyloied a "Piece of Wood in preſſing himſelf down, from "which he found Eaſe." Here *Hippocrates* ſpeaks of a Man who relieved his Pain by applying the Head of a Stake or Pole upon the Part; but he does not tell where the Pain was ſeated. *Galen*, commenting upon the Place, thinks it was a Pain in the Hand: *Valleſius* thinks it was a Cholic; and that he preſſed the Part where the Pain raged moſt with a wooden Stake; ſince ſuch Pains are much eaſed

* 12. *Meth.* c. 8. † 3. *In* 6. *Epid.*

eaſed by a ſtrong Preſſure, by toſſing the Body, and change of Poſture or Figure. And this indeed Nature points forth in Belly-achs, when we naturally preſs and ſqueeze the Part affected with our Hand or our Fiſt, for that hinders the Diſtention and Riſing of the Part. In like manner *Hippocrates* * recommends the Preſſure of one's Hand in hyſteric Fits, in order to keep the Womb within its due Bounds; and in my own Practice I have found this one Remedy more ſerviceable, than all the Train of hyſteric Medicines.

But with Reſpect to the Cure of theſe poor People, it is plain, both from Reaſon and Experience, that their Bodies, being worn out with Labour, and fed with bad Nouriſhment, ought not to be exhauſted with repeated Bleeding and Purging. Vomits they can bear with more Eaſe; and ſometimes ſcarifying Cupping-glaſſes work Miracles in their continual Fevers, wherher it be that the great Confidence they have in this Remedy, or that ſome other unknown Quality crowns it with Succeſs: If we exhibit any Alexipharmics, they ought not to be of the volatile Kind, in Compliance with Nature, for they are apt to ſweat not only in Summer, but in Winter; and it is well known, that Sweat is eaſily raiſed upon thoſe who are inured to Work and Exerciſes. When the Diſeaſe is checked, and they begin to recover, let them return to their own rural Cottages, and take their uſual Diet. *Plato* † had Reaſon to deride *Herodicus* the Phyſician, who offered to preſcribe Rules of Diet to Workmen and Labourers.

I take this compendious Way of Cure, to be the beſt for the People we now treat of; for, in the uſe of a tedious long Series of Remedies, they gradually decay and grow ſick of the very Cure.

CHAP.

* 2. *de Morb. Mal.* n. 82. † 3. *de Rep.*

CHAP. XLII.

Of the Diſeaſes uſual in CAMPS.

MILITARY Diſcipline, which has long diſputed the Precedency with Learning, it being a Doubt which is fitter to immortalize the Names of its Votaries, differs from all other Arts in this Point; that, whereas the others are calculated for preſerving and ſupporting the Life of Man, than which nothing can be more precious, it ſeems only to project how to deſtroy and laviſh it away. It is certain, that, in the Age we now live in, we cannot invent a more calamitous and miſerable ſort of Life, than that which our common Soldiers are forced to lead, not only in the Field and Sieges, but even in Winter-quarters; whether it be from our purſuing a different Method of War and Fighting from the Antients, or from the modern Neglect of military Diſcipline, the Health of the Soldiers being now leſs carefully looked after than in former Times. For thoſe, who in any Expedition have the good Luck to eſcape the Fury of Fire and Sword, are often ſubject to a long Train of Evils; and generally Armies loſe one of ten by ſome malignant, epidemic Illneſs. Hence we find, that Camp-fevers and other Contagions, mortal Diſeaſes, are famous or rather infamous: For Inſtance, the *Hungarian* Fever, which firſt appeared in 1566, in the *Pannonian* Expedition of the Emperor *Maximilian* II. againſt *Solyman*, and is accurately deſcribed by *Sennertus* *, who calls it a military

* Lib. 4. c. 14. *de Feb.*

litary or Camp-fever, arising from bad Aliment and corrupt Water, in Conjunction with several other Causes, namely, Watching, vast Fatigue, Rain, Heats, Colds, sudden Frights, and a thousand other Hardships, which no-body knows but those who have felt them.

But of all the Causes, which introduce Diseases into Camps, I take none to be so pernicious as the Filth and Nastiness of the Camps. God prohibited the *Israelites* to discharge their Excrements within the Camp, injoining them not only to do it out of the Camp, but to dig a Hole in the Earth for receiving the Excrements, and then to cover them up; for which End every Soldier was obliged to wear a sharp-pointed Stake at his Side: And the same Custom is still observed among the *Turks*, whose Soldiers are much cleaner than ours. The Words in *Deuteronomy* * run thus; *Thou shalt have a Place also without the Camp, whither thou shalt go forth Abroad: And thou shalt have a Paddle upon thy Weapon: And it shall be, when thou wilt ease thyself Abroad, thou shalt dig therewith, and shalt turn back and cover that which cometh from thee: For the Lord thy God walketh in the midst of thy Camp.* For my own Share, I acknowledge I never did practise in Camps; but I am informed, by Physicians who have waited upon great Armies, that sometimes in Summer there is such a nauseous Smell in Camps, that nothing can be more disagreeable: And therefore it is no Wonder, if peculiar and unknown Diseases break out in Camps, which require peculiar Names and Cures. We are not without some learned Authors who have expressly treated on this Subject, particularly *Raymundus Mindererus*, who has published a Treatise *de Militari Medicina*: And

* Chap. 23.

And *Henricus Screta*, who has writ admirably well of the Camp-malignant-Fevers.

I was once of Opinion, that the Practice of Phyſic in Camps bore a different Aſpect from what it does in Cities, and was ſo lawleſs and unbounded, as to venture upon Remedies with a ſort of Temerity: For as a Camp-life uſes to prove but a ſhort one, ſo I reckoned the Art of Phyſic ſhould not be long winded, but expeditious in ſuch Places: And that as the Occaſions of Cure are ſlippery and quick-paced, ſo Experiments ſhould be dangerous: And in fine, that the Accidents were ſo ſudden and unexpected, and the Change of Camps ſo frequent, that neither the Phyſician nor the Patient could have the Opportunity of a regular Cure. But the learned Dr. *George Barſntorff*, Phyſician to the Duke of *Hanover*, undeceived me while he was at *Modena*: He informed me, that the Camp-practiſe is not ſo coarſe and irregular as I took it to be; and that Princes and Generals of Armies take care to provide expert Phyſicians with large Stocks of Medicines, both for themſelves and their Forces; as we read, that in the *Trojan* War the *Grecians* were attended by *Machaon*, a famous Phyſician and a noted Surgeon. In ſhort, this learned Gentleman, having attended the *Brunſwick* and *Luneburg* Troops for five Campaigns in *Hungary*, during which Campaigns the Armies were very numerous, communicated to me many material Remarks, which I am now about to relate, to the end that I may do Juſtice to the Subject from the Knowledge of another, where my own is deficient.

Setting aſide Wounds, which are the Trophies of War, all the Diſeaſes of Camps are by this famous Man reduced to two Heads, a malignant Fever, and a Dyſentery; all the reſt being only the

the Harbingers or Followers of these two. The neareſt and moſt immediate Cauſe of malignant Fevers he imputes to a virulent *Miaſma* entertained and rooted in the Maſs of Blood; the occaſional Cauſe being derived from lying long in the ſame Camp, from the dead Corps of Men and other Animals; and from the not covering of their Excrements, which are all apt to pollute the Air with corrupt Steams, and convey malignant Particles to the inmoſt Receſſes of Life. He places this Malignity in an impure Acid, which is volatile, very active, and deſtroys both the Humours and the Spirits, by the Intervention of a Fermentation. Theſe malignant Fevers, he ſays, appear generally towards the End of Summer; and are afterwards accompanied by Head-achs, Deliriums, Convulſions and colliquative Looſneſſes, as Effects accompany the Cauſe. He adds, that theſe malignant Fevers diſappear in the Camps when the Nights grow cold; for, the Sun being then upon its Receſs, the Texture of the Air is more compacted, and the fetid Exhalations are wrapped up in their proper Receptacles; and ſo, an End being put to the active Influence both of the offenſive Smell and Sun-beams, the Malignity is likewiſe at an End.

Thus he lodges the Seminary of this Malignity, which breeds and feeds Camp-fevers, in a corrupt and defiled Air; ſo that, if any Diſeaſe deſerves the Title of *Hippocrates's* τὸ Θεῖον, certainly Camp-fevers have the beſt Right to it; which may likewiſe be affirmed of the Remedies exhibited in ſuch Caſes. That the Antients owned no *divine Thing* in any Diſeaſe, but ſuch as owe their Original to the Air, is evident from the Teſtimony of *Hippocrates* *, who deduces the Original of Diſeaſes from the

* *De flat.* n. 4.

the Heavens, *i. e.* the Air; and calls the Air, the Author and Ruler of what is incident to our Bodies; though *Helmont* * indeed would have this *divine Thing* to ſignify the wonderful Property of a Ferment.

The celebrated Phyſician, from whom we have theſe Remarks, ſays, that † *Hippocrates*, in his Book *de Morbis*, calls the Original of a Diſeaſe from the Air ἀνεπιτήδειαν; and, in his Book *de Veteri Medicina* ‡, makes uſe of the ſame Word, to ſignify an acid Humour, in Oppoſition to a ſweet Humour; ſo that a Contagion ariſing from the Air may be properly called, a volatile Acid.

The Symptoms, which precede theſe Camp-fevers, are a ſort of Perturbation and Uneaſineſs, now and then a Shivering or two, a manifeſt Sign of a virulent *Miaſma*. The Symptoms which accompany the Fever are Watchings, Deliriums, great Heats, Anxiety about the Heart, an oppreſſing Sleepineſs, Head-achs, and often Sweats that laſt even to the Height of the Diſeaſe.

In order to tell the good or bad Event of the Diſeaſe, he ſays, we muſt have an attentive Regard to the Preſence or Abſence of Sweat; for if we obſerve Sweat, even from the Beginning of the Diſeaſe, with a large Pulſe, we may infallibly predict a Recovery, notwithſtanding the Appearance of very violent Symptoms; and a great many, who do not ſweat, die ſuddenly, though their Symptoms ſeem to be milder: Neither is it ſo much to the Purpoſe, whether theſe Symptoms appear in the critical Days or not, ſince *Hippocrates* ‖ calls thoſe Sweats good, let them come when they will, which make the Diſeaſe more tolerable.

As

* *In Igno. Hoſp.* † Lib. 4. n. 26. ‡ N. *ult.* ‖ *Prænot.* n. 5.

As for the Cure of these Fevers, he says, he always found Bleeding fatal, and carefully avoided it; and that, after the first or second Shivering, before the virulent *Miasma* dived deeper into the Receſſes of Life, he presently exhibited some volatile Alexipharmic, such as *Wedelius*'s Bezoardic-tincture, with rectified Spirits of Hartshorn; the ensuing Days he prescribed a more temperate Cordial, such as Powder of Contrayerva, with Hartshorn and Salt of Vipers every six Hours, till a plentiful Sweat broke out; upon the Eruption of which he gradually leſſened the Dose and Frequency of taking. In the mean time he did not offer to render the Body soluble unless in the Case of some urgent Neceſſity, for he observed, that the Laxity of the Belly stopped the Sweat and Transpiration: And, in order to promote the Transpiration, he exhibited the Decoction of Oats with Scorzonera-roots, Shavings of Hartshorn, and the like. He found Blistering-plaisters applied to the Arms and Thighs succeed well in three Cases, which were a Sleepineſs, Head-achs, and Lice sculking under the Skin almost.

He proposes the same Method for the Cure of Camp-dysenteries, in giving twice or thrice in the beginning the same Bezoardics, joined with small Doses of Opiats, to the end that the Current of the Humours to the Fundament being thus checked, and the Fibres of the nervous Parts relaxated, Sweat may break forth with more Liberty; the Body being at the same time well covered up with Cloaths, and a Cruſt of Bread soaked in hot Spirit of Wine being applied to the Navel. Having procured Sweat, if the Body stood in need of any Purgation, he prescribed a laxative Powder of Rhubarb, red Coral prepared, and burnt Hartshorn to be taken in Broth; and upon repeating of this twice

twice or thrice, he often found that the Diſeaſe gave way: After which, if there was Occaſion, he gave them ſome ſtomachic Medicine to raiſe their Appetite.

For quelling the Gripes and Throws in the Inteſtines, he recommends carminative and nervine Medicines joined to Opiats, ſuch as the *Mixtura Polychreſta* deſcribed by *Wedelius* in his *Opiologia*; and paregoric Bags of the Flowers of Chamomile, Linſeed, Bran, and Salt. If the Flux of Blood continues long, he recommends the abſorbent and ſtyptic Medicines; ſuch were the Remedies which he found moſt beneficial in the Cures of Camp-diſeaſes, without offering to let Blood.

As for the Wounds, which are very frequent, he made a very curious Remark upon them; which is, that the very ſlighteſt and leaſt ſuſpected had a Camp-malignity in them: For he obſerved, that in long Sieges all contuſed Wounds, ſuch as Gun-ſhot Wounds, eſpecially in the Head, though ever ſo ſlight, were always difficult to cure; and, though treated with the greateſt Care, proved often mortal to the great Diſcredit of the Surgeons, by the Acceſſion of an Inflammation, and afterwards a Gangrene; inſomuch that they ſuſpected the Enemies had poiſoned their Balls. But, being informed by Deſerters, that the Beſieged were equally unfortunate in their Wounds, we began to ſuſpect ſome Malignity occaſioned to the Wounds by the Air, and thereupon preſcribed Bezoardics and Abſorbents with cephalic Vulneraries; as alſo the Application of the ſame ſort of Medicines to the wounded Part, by injecting into it Decoction of Worm-wood, Viper's-graſs and Rue mixed with Honey, or mixing the Digeſtive with Oil of St. *John*'s Wort, Oil of Rue, and the like. By the

the Use of which Means they found the Cure succeeded better.

This learned Gentleman, whose Observations upon all manner of Things were very curious and exact, mentioned one Thing to me which cannot but gratify any one's Curiosity; which is a very frequent Illness in Camps, which invades not only the Common Soldiers, but even Gentlemen and Persons of Distinction, and breaks forth in a sudden and passionate Desire of seeing their own Country and Relations (called in the *German* Language, *das Heimwehe*) which generally proves ominous. For, after that longing Desire seizes them, they either die of some Disease, or are killed in Battle, insomuch that scarcely one of a Hundred escapes; and that it is a common Proverb in Camps, *He that seeks his Country finds Death.*

He told me further, that he knew Men of no small Figure, who were otherwise very brave, and yet, upon the Declaration of some intended Expedition, were so Thunder-struck, as to form in their Minds all of a sudden an Idea of their approaching Death, and to predict their ensuing Exit in that Expedition with so much Certainty, that they took leave of their Friends the Day before the Fight, made their Wills, and gave Orders for their Funerals: And after all, when the Engagement came, the Prediction was verified in their Death.

He further added, that this mental Disease, produced by the Impressions of Horror, and the dismal Prospect of Death, was cur'd by inspiring them with a different Turn of Soul, and by presenting them with a certain Emblem of their Safety, provided these measures were taken before the Disease was deep-rooted; since, by the imagined Virtue of that Emblem, the Spirits, which were

formerly bound up, are ſet at Liberty, and the Image of Death effaced from the Mind.

Now this comes to paſs by natural Means, and not by any Virtue inherent in theſe Emblems; for as the Force of the Imagination and Apprehenſion of Death throws the Soldiers into ſo great a Deſpondency, ſo the ſame Power of the Imagination effaces the Impreſſions of Fear and Death, by the apprehended Virtue of the Emblems, though in reality they have no Virtue at all. We meet with a great many things in Authors concerning Amulets and Charms, but generally ſpeaking theſe Authors aſcribe no Virtue to them, beyond what is owing to the paſſive Deception of a credulous Mind. So true it is what *Seneca* * hath ſaid, *Quædam non niſi decepta ſanantur*, ſome Diſorders are cured only by Deceit. This recalls to my Memory what I have read formerly in *Carteſius* of the Force of Imagination, which he ſays is ſo great, that to draw off the Imagination is the greateſt Remedy of any Diſtemper: For, ſays he, if a Man be always entertained with Tragedies; though his Mind be compoſed, he will be ſeized with ſome ſort of Grief; his Mind will be accuſtomed to Groans, his Heart and its Fibres will ſuffer a Contraction, by which Means the Circulation of the Blood willl be retarded, and Obſtructions bred in the Liver and the Spleen. On the other hand, if a Man be tortured with various Diſeaſes, if he employs his Thoughts on ſuch Objects as are pleaſant and exhilarate the Mind, he makes way for the Recovery of his Health.

Another Remark, made by the ſaid learned Gentleman, which indeed is no leſs curious than the former, was, That, after an Engagement, in moſt of the Corps that lay ſtripped on the Ground (as they

* *Ep.* 23.

they commonly do) the Privy Members were raiſed and diſtended as with venereal Rage; and that in the Corps of the Women a ſort of Stiffneſs was obſerved in their lower Parts. For a Solution of this Phænomenon it may be offered, that, when Soldiers go upon an Engagement, they boil with Fury and Rage, which drives all the Spirits and Blood from the inner to the outer Parts of the Body; inſomuch that thoſe who are killed in Battle, as they diſcover Fury and Threats in their Looks even when they are dead, ſo their Genitals retain a Convulſion after Death, by reaſon of the impriſoned Spirits detained in them. It is well known, that the Aſpect of thoſe who die a violent Death, and much more thoſe who fall a Sacrifice to *Mars*, is widely different from that of others who die in their Beds of ſome acute or chronical Diſeaſe. *Valerius Maximus* * makes mention of a *Roman* Soldier, in the Battle of *Cannæ*, who, being diſabled to handle his Weapon by the Loſs of his Hands, catched hold of a *Numidian*, who was going to ſtrip him, and after biting off his Noſe and his Ears, expired full of Revenge.

I thought fit to inſert theſe Remarks, communicated by the learned Gentlemen above-mentioned, as being uſeful not only to thoſe who practiſe in Camps, but to the Phyſicians of Cities and Towns: For when War over-runs Provinces and Kingdoms, it often ſo falls out, that the Troops retire from their Summer-expeditions to winter in the neighbouring Cities and Towns, in which the Camp-diſeaſes will by this Means readily occur. The laſt Year, when the *German* Forces wintered in theſe Countries, I had occaſion to obſerve ſuch Fevers and Dyſenteries as we read of in Authors;

* Lib. 3. c. 2.

and I know a great many Men of Figure died, to whom the Phyſicians, being ignorant of Camp-practice, and the Genius of Camp-diſeaſes, preſcribed unſeaſonable Remedies, ſuch as Bleeding and ſtrong Purges, without any regard to the chief Indication of conquering that virulent and raging *Miaſma*, and throwing it out by the Pores of the Skin. In fine, Experience, the Miſtreſs of Things, ſhews, that this is the only Way of proceeding in the Cure of ſuch Diſeaſes; and therefore, when any ſuch Occaſion offers, it becomes us to conſult the Authors mentioned above. *Helmont* * likewiſe makes mention of a certain Fever, which runs its whole tragical Courſe without any Senſe of Heat; and is by him called a Camp-fever: The Nature and Progreſs of this Fever is deſcribed by *Regnerus de Graaff* †, *Cornelius Bontekoe* ‡, *Etmuller* ‖, and others. To conclude, I have obſerved, that almoſt all the Writers, who have treated of this Subject, impute the Cauſe of theſe Diſeaſes to a volatile, corroſive, and ſtrong Acid: So that the whole Indication lies in breaking and enervating this Poiſon, and throwing it out through the Glands of the Skin, by the help of volatile Salts.

CHAP. XLIII.

Of the Diſeaſes of LEARNED MEN.

WE conclude our Hiſtory of the Diſeaſes of Artificers or Tradeſmen with a ſhort View of thoſe of the learned World, hoping, that the Men

* *De feb.* c. 1. † *De ſuc.* ‡ *Pane. Diatr. de feb.* ‖ *T. 2. de Febr.*

Men of Letters will not take it ill to find themſelves ranked in the Claſs of Tradeſmen, conſidering, that as other Tradeſmen gain by their Trades, ſo they purchaſe to themſelves by the purſuit of Letters, if not great Eſtates, like thoſe of Merchants, at leaſt a Livelihood and many comfortable Conveniencies: For I ſee few, in this Age at leaſt, who would give themſelves the Trouble of purſuing Learning, if they were not pinched with narrow Circumſtances before they ſet about it; ſo true it is, that neceſſity is at once the Mother of mechanic Arts and of Wiſdom. Purſuant to which Maxim *Ariſtophanes* * writes, That if Poverty and Riches were out of the World, all things would be overturned, and Philoſophy with all other Arts would lie uncultivated for want of Votaries.

Generally ſpeaking, ingenious Men if pinched with Poverty, and buoyed up with the Hopes of getting Riches, apply themſelves intirely to the Study of Letters; and by that Means procure to themſelves not only a ſplendid Eſtate, but great Reputation among the Perſons of Quality, who are then forced to knock at the Gates of the Learned to aſk Advice. But after all, though the Purſuit of Learning affords a plentiful Harveſt of Riches and Glory, it ſeldom fails to produce Thiſtles and an ugly Crop of Evils: For learned Men, uſe *Ficinus*'s † Words, are as ſlothful and idle in their Body, as they are active and buſy in their Mind and Brain, and ſo almoſt all of them, excepting the Practitioners of Phyſic, undergo the Inconveniencies of a ſedentary Life. It is a known Saying, That a Man grows wiſe by ſitting; and accordingly they ſit Night and Day among the Trophies of Learning, and are not aware of the In-

* *In Plut. Act.* 4. † *De Stud. val. tu.* c. 3.

conveniencies accruing to their Bodies, till the hidden Cauſes of Diſeaſes have gradually crept in upon them, and confined them to their Beds. I have already ſhewn the Inconveniencies of a ſedentary Life, and therefore ſhall not inſiſt upon them now.

The Profeſſors of Learning are likewiſe not unfrequently ſubject to the Inconveniencies of a ſtanding Life; for, to avoid the Injury of a ſedentary Life which is ſo much cried down, many of them run to the contrary Extream, and ſtand turning over their Books for ſeveral Hours, and even whole Days, which is not leſs, nay perhaps more hurtful, than conſtant ſitting.

All the Men of Learning uſed to complain of a Weakneſs in the Stomach. *Celſus* * ſays, A great many of the Inhabitants of Cities and Towns, and almoſt all the Lovers of Learning, have weak Stomachs. There is no hard Student almoſt but complains of his Stomach: For while the Brain is imployed in digeſting, what the Deſire of Knowledge and the Love of Learning takes in, the Stomach cannot but make an imperfect Digeſtion of the Aliment, becauſe the animal Spirits are diverted and taken up in the intellectual Service; or theſe Spirits are not conveyed to the Stomach with a ſufficient Influx, upon the Account of the ſtrong Application of the nervous Fibres, and the whole nervous Syſtem, in profound Study. How much the Influx of the animal Spirits contributes to the due Performance of all the natural Functions of the *Viſcera*, is manifeſt from the Decay of paralytic Parts; for though theſe Parts are ſupplied with vital Juice by the perpetual Afflux of the arterial Blood, yet they dwindle and decay by being deprived

* Lib. 1. c. 2.

prived of that nervous Juice, or Spirits, or whatever it is, which is conveyed to them through the Nerves.

This gives Rise to Crudities, great Plenty of Flatuses, a Paleness and Meagreness all over the Body, the Parts being robbed of their nutritious Juice; and in fine, all the Misfortunes which follow a *Cacochylia*, or faulty Chylification. Accordingly we find, that studious Persons, though naturally of a jovial merry Temper, do, in Process of Time, become melancholy and heavy. We say commonly, that melancholic Persons are ingenious; but we have more Reason to say, that ingenious People turn melancholic, the more spirituous Part of their Blood being consumed in the Exercise of the Mind, and only the earthy drossy Part left behind.

I do not deny, but that this Disorder may be considerably promoted by a Temperament of the Body which tends gradually to Melancholy, with a moderate Mixture of the other Humours. *Ficinus* *, in the Book he writ for the Benefit of studious Persons, gives several Reasons why learned Men grow melancholic, some of which he takes from natural Philosophy, and others from Astronomy, which was his chief Study; but all of them depend upon the violent Motion and Dissipation of the animal Spirits, which makes the Blood black and thick. We conclude therefore, that learned Men are commonly subject to melancholic Disorders, especially if they are naturally of such a Constitution: And accordingly we find the thorough-paced Scholars are thin, lean, wan-coloured, morose, and Lovers of a solitary Life.

* Lib. 1. c. 3.

They likewiſe Contract a Weakneſs of the Sight by degrees; for they cannot read and write with an intent Poſture of the Eyes, without injuring the Sight, eſpecially if they write ſmall, as quick-witted Men commonly do. *Ariſtotle* † has a curious Conjecture enough, if it were but true, upon the Queſtion, why pur-blind Perſons uſually write ſmall Letters? *It is ſtrange*, ſays he, *that thoſe who are dim-ſighted, ſhould do that which the ſharpeſt-ſighted ought to do.* For this Practice of pur-blind Perſons he brings ſeveral Reaſons, and ſo does *Plempius* ‖, who ſays, "He has ſometimes "doubted, whether it was not only a Sort of Af-"fectation in ſuch People as he thought quick-"ſighted." But I know a great many ſuch who write their Letters large enough; though it is not to be doubted, but that thoſe who accuſtom themſelves to write ſmall and fine, grow thereupon ſhorter ſighted, and by degrees contract a *Myopia*: For by that Means the Eye is accuſtomed to ſee only ſuch Objects as approach near to it, and by virtue of that Cuſtom the *Retina* is confirmed, and hardened in a remoter Situation from the *Pupilla*, and ſo the Eye is robbed of the Mobility which Nature gave it.

Sometimes thoſe who read and write much, are troubled with the Diſorder which is oppoſite to a *Myopia*, ſo that in Proceſs of Time they cannot ſee, unleſs the Object be held at a Diſtance from them: And this is familiar to old Men; for ſince they write and read with their Head and Body bended forward, the Cryſtalline Humour readily falls forwards towards the *Pupilla*, and ſtops it up ſo as to cauſe a Blindneſs. Hence *Platerus* * gives this

† *Sect.* 31. *Prob.* 8. *and* 16. ‖ Lib. 4. *Ophthalm.* c. 42. * *Tom.* 1. *Prax. med.* c. 7.

this as the Reaſon, why Horſes and other Brutes are under Diſorders of the Eyes more frequently than Men; becauſe, as they go with their Faces bowed to the Ground, the Humours of the Eyes are gradually carried forward, and there they ſettle.

Further hard Students, by Reading and Writing with their Head and Breaſt bent, compreſs the Stomach and *Pancreas*, by which Compreſſion the Stomach is injured, and the Courſe of the pancreatic Juice through its Ducts is ſtopped, and thereupon the Oeconomy of the natural Viſcera is diſturbed. This intercepting of the pancreatic Juice, by ſuch a Poſture of the Body, is taken notice of by *Dolæus* ‡, as being very pernicious in hypochondriacal Caſes. Nephritic and Arthritic Diſorders the Followers of a ſedentary Life, are likewiſe intailed upon the Learned: And we ſeldom meet with arthritic Perſons, who are not likewiſe troubled with nephritic Diſorders, not ſo much becauſe their conſtant lying and ſitting fatigues the Loins and Kidneys, as becauſe the ſame is the material Cauſe of both Diſeaſes. *Eraſmus* *, in an Epiſtle to his arthritic Friend, after complaining heavily of his being tortured with the Stone in the Kidneys, adds, that he and his Friend were related, as being married to two Siſters, and that his Friend's Wife kept him Company, without the leaſt Suſpicion of Adultery.

Above all the Retainers to Learning, the bad Influence of Study and Fatigue falls heavieſt upon the Writers of Books for the Public, who ſeek to immortalize their Names: By *Writers* I mean Authors of Merit; for there are a great many, who,

‡ *Enoyc. med.* l. 3. *de morb. abdom.* c. 11. * *Vid. veron. de Ren. Calcu.* l. 2.

through an inſatiable Itch of appearing in Public, patch up indigeſted Medleis, and make abortive rather than mature Productions; not unlike ſome Poets who will compoſe an hundred Verſes, *ſtantes pede in uno*, as *Horace* expreſſes it. Our wiſe and grave Authors, who take care of their Reputation and Credit for Ages to come, wear themſelves out with toiling Night and Day, and ſometimes fall a Sacrifice to Death before their Works appear. But they are not ſo much injured by Study, who only covet to know what others knew before them, and reckon it the beſt Way to make uſe of other People's Madneſs, as *Pliny* writes of thoſe who would never build new Houſes, but rather buy and live in thoſe, which were built to their Hands by other Folks.

But now that I have mentioned *Pliny*, I cannot paſs by a memorable Saying of his, relating to the Subject now before us *, the Explication of which has racked many a great Wit; *Atque etiam morbus eſt aliquis per ſapientiam mori, To die by Wiſdom or Knowledge is a ſort of a Diſeaſe.* Every Critic has ſome peculiar Notion of the Diſeaſe here meant by *Pliny*.

The famous *Gaſpar a Reies* in his *Jucundæ Quæſtiones* ‡ reckons up all the various Opinions of the Learned upon this Paſſage, particularly of *Mercatus*, *Mercurialis*, *Pineda*, *Salmaſius*, *Dalechampius*, *Ludovicus della Cerda*, and others, where we find that ſome (particularly *Mercatus*) think *Pliny* ſpeaks of dying in old Age, which challenges Prudence as its Property: Others, as *Pineda*, are of the Opinion, that he means a Quartan Fever, which, by a ſort of Wiſdom and intelligent Faculty, invades at ſet Days and Hours: Others alledge that the Text is corrupt, and that inſtead of *per ſapientiam mori*, it ſhould

* Lib. 7. H. N. c. 50. ‡ *Quæſt.* 100.

should be *per deſſipientiam mori*: Others again as *P. della Cerda*, conjecture, that he points to a Faculty of Propheſying, which ſome acquire upon their Death-bed, and ſo foretel what is to happen after their Death: And, in fine, *Gaſpar a Reies* himſelf interprets it of a *Paraphrenitis*, upon a Wound or Contuſion of the Diaphragm, as being that Part of the Body in which the Ancients ſeated Prudence.

If it be lawful to add my Sentiments to thoſe of ſo many great Men, I am of Opinion, that *Pliny* reckoning up the Dangers, Accidents, and Diſeaſes, which continually haunt our Life, had a mind to place in that Number an occaſional Cauſe, which frequently is followed with Death; which is, the Study of Wiſdom or Learning, which oftimes hurries its Votaries to an immature Death; ſo that in the Claſs of Diſeaſes there's one not taken notice of by Phyſicians, *viz. per ſapientiam mori*.

Here I cannot but quote that Golden Paſſage of *Plato**, in which he gives an admirable Account how the Study of Letters occaſions various Diſeaſes. That divine Author having aſſerted, that the Beauty and Health of Mankind, lies in a certain mutual Moderation and Proportion between the Soul and the Body, proceeds to this Purpoſe. "When "the Soul is much more powerful than the Body, "and is elevated within it, the Body trembles and "languiſhes: In like manner, when the Soul "bends all its Force upon Speaking or making "Diſcoveries, it quite diſturbs and ſinks the Bo-"dy. Again, when, by an ambitious Sort of "Emulation, it diſplays its Energy in Speaking "and Diſputing both privately and publicly, it "inflames and unhinges the Body; and ſometimes, "by

* In. Trin. p. 495.

" by raiſing Defluxions and Rheums, it impoſes " upon Phyſicians, and puts them upon hunting " after contrary cauſes. "

Thus it is that Men of Learning by exceſſive Application to Study, render their Bodies ſickly and unfit for bearing the Motion of the Soul and the Spirits: For the Soul and the Body are linked together by ſuch an inviolable Tie of Fellowſhip, that all the Good or Evil of the one redounds to the other: And as the violent Exerciſe of the Body makes the Soul droop and languiſh in the Performance of mental Functions; ſo, when the Soul is too eager in its Purſuit of Wiſdom, the Body cannot but decay, by reaſon of the Conſumption of the Spirits, which are the common Inſtrument for the right Performance both of material and ſpiritual Operations.

Labour, ſays the great Maſter of our Art*, *is proper for the Joints*, *Food for the fleſhy Parts*, *Sleep for the Viſcera*, *Walking for the Soul*, *and Thinking for Men*. Not to mention what *Galen* and *Valleſius* have advanced in their Comments upon this Place, I ſhall only obſerve, that, according to *Hippocrates*, Thought is the proper Exerciſe of the Soul: And ſince all ſtudious Men are entirely taken up in Thought and Meditation, eſpecially ſince ſome of our Moderns place the Eſſence of the Soul in Cogitation, it cannot be but that the Body, thus forſaken by its Guide and Ruler, ſhould flie into Exorbitancies, and undergo ſeveral Diſorders, particularly Diſtillations, as *Plata* calls them, a lazy Sluggiſhneſs of the Limbs, a waſting Conſumption and an untimely old Age.

Such is the general Calamity of the Profeſſors of Learning; but ſome of that Number are ſubject to Diſeaſes

* Epid. 5 Epid. 6.

Diſeaſes peculiar to their reſpective Profeſſions, as Preachers, Philoſophers who diſpute continually in the Schools, Declaimers at the Bar, and all others whoſe Profeſſion obliges them to exerciſe their Voice; for theſe are often ſubject to Defluxions and Ruptures of the Veſſels in the Breaſt. Again, Advocates or Barriſters, Judges and Servants of great Princes, being worn out with Study, and Watching, and vaſt Fatigues, lead the Van of the hypochondrical Tribe, and gradually decline to a Conſumption. To *Fortunatus Plempius* his Book, *de Togatorum Valetudine Tuenda*, we have prefixed an admirable Epiſtle of *Petrus Xilander*, Counſellor to his *Catholic* Majeſty in the Court of *Brabant*, in which that learned Lawyer deſcribes the many Diſorders and Miſeries he had contracted by the Gown. For my own part I have obſerved, that all the famous Lawyers, and public Miniſters, I have had occaſion to know, either at the Court of *Rome*, or at the Courts of other Princes, were afflicted with a thouſand ſorts of Diſeaſes, and curſed the Profeſſion they were engaged in. However, conſidering that the above-mentioned Book of *Plempius* is very ſcarce in *Italy*, I thought it not improper to inſert here that Letter of *Xilander*'s which I know will be very acceptable to the Miniſters of Princes.

To Vopiſcus Fortunatus Plempius, *Doctor of Phyſic, and firſt Profeſſor in the Univerſity of* Louvain, P. Xilander *wiſheth Health.*

'SINCE your Requeſt is ſo earneſt, I am ready to comply with it, in relating the Infirmities and Obſtacles of Health, which ſeem moſt to infeſt this active Life which I have led in the Town, that you may be able to give us more accurate Cautions and Cures in the Piece you are going to Publiſh *de Tuenda Valetudine Togatorum.*

'A Country-life is not only pleaſanter and eaſier, but more healthful than a Life ſpent in Towns, in the Diſcharge of public Offices, which drags peculiar Diſeaſes after it, as the North Eaſt Wind doth the Clouds. A Weakneſs of the Stomach, Cholic and nephritic Pains, and a Thouſand other Things, which retain to theſe, are the peculiar Torture of our ſedentary City-life; and if you can in your intended Work free us of theſe, you will mightily oblige the whole Order. However, the Source of all our Evils is eaſily traced; that which moſt injures us, is that lazy Cuſtom of conſtant Sittting which is inſeparable from our Profeſſion. We ſit whole Days like lame Coblers, either atHome, or in the Courts of Juſtice. When the meaneſt Fellow in the Republic is either exerciſing his Body, or unbending his Mind, with inactive Eaſe, we muſt be ſitting in the midſt of Quarrels and wrangling Diſputes. And though the Condition of all buſy Men is miſerable, yet thoſe are moſt in Miſery who have not Leiſure

'to

'to mind their own Buſineſs. The Miſery of being conſtantly teazed with the Noiſe of the Bar 'is pleaſantly ſet forth by *Claudius Cæſar* in the 'Play of *Seneca*, where, turning to *Hercules*, *You 'know*, ſays he, *what Miſery I underwent when I 'heard the Lawyers plead; if you had fallen in a-'mong them, notwithſtanding all your Courage, you 'would rather have choſen to have cleanſed* Augeus's *'Stables.* But the Miſery is, we ſit not only in 'the Courts, but in the very public Streets.

'It is an ugly Cuſtom we have brought in of 'riding continually in Coaches; if we did but 'walk the fourth Part of the Way we ride in a 'Day, the ſedentary Fatigue might be diſcuſs'd 'by the ambulatory Motion. But how can we 'help it? Our Streets are ſo crouded with Coaches, 'that, unleſs we have a mind to be trod under 'Foot by the Coaches, or be beſpattered with Dirt, 'we are forced to ride in Coaches in our own 'Defence. For the World is come to this paſs, 'that we ſeem to have loſt the uſe of our Feet, 'and doubtleſs you will think it will be of uſe 'to the Health of Mankind, to have that Uſe re-'vived to its former Frequency.

'*Martial* thought it no leſs than Madneſs for a 'young hale Man to walk through the Town up-'on borrowed Feet; witneſs, the Epigram upon 'one *Philippus.*

'*Octophoro ſanus portatur, Avite, Philippus,*
'*Hunc tu ſi ſanum credas, Avite, Furis.*

'But, to purſue the other Diſadvantages which 'attend us: Our Gates are always beſet with 'a Crowd of People; the moſt quarrelſome Pet-'tifoggers and Brawlers are always teazing us 'with their Noiſe, and redoubling their outra-

'gious,

'gious Jargon of the Bar. Now *Seneca* ſays, he 'cannot be happy who is ſurrounded with a great 'many; for it fares with him as with a Lake 'which the Viſiters are always diſturbing and 'emptying. The moſt unſeaſonable Trouble we 'have, is to be called upon Buſineſs immediately 'after Dinner; then muſt we go and hear the 'Barriſters wrangling Diſputes.

'Your *Hippocrates* condemns all Study after 'Eating in thoſe of a weak Stomach, in which 'Number are all thoſe who are tied to Offices in 'Cities. What do you think of thoſe turbulent 'contentious Diſputes which always grate our 'Ears? Not to mention the continual Attention 'we are obliged to, not only in the Court, where 'we are ſurrounded with Buſineſs, but almoſt in 'all Companies. We can ſcarcely ever unbend 'and act a plain ſimple Part, but are always ob-'liged to perſonate as it were and act under a Cha-'racter, for the Nature of our Poſt and Office 'obliges us to a continual diligent Obſervation 'of our Steps.

'Now, as *Seneca* ſays, thoſe who live under 'a Maſk or Character, cannot live a pleaſant 'Life; for the Pleaſure of Life lies in that ſincere 'and plain Simplicity which tacks no Appendage 'to its Actions. I reckon no body is ignorant, 'that Sadneſs and Grief is an Enemy both to 'Life and Health. As for our Way of Living, it 'has nothing ſingular toward either Extreams.

'A thin Diet is more proper perhaps for the 'Life we lead; for I do not think that *Celſus* writ 'for us when he ſaid, That Men ought always to 'eat a great deal of Meat; for he ſubjoins the 'Caution, provided they can digeſt it; which 'cannot be applied to thoſe, who call off the Heat

'of

' of their Stomach every Hour to assist the Offices
' of the Mind.

' I do not know any one of our Profession in
' this Place, who feasts high over his Books, as
' *Aloysius Cornarus* of old did among the *Venetians*,
' and *Marchio Malvechius* lately in *Holland*. Some-
' times indeed we give Way to Jollity of Compa-
' ny, and cloud our Wisdom with Wine, with-
' out observing the nice Points of Sobriety. But
' how far these Adventures are to be avoided or
' allowed, we expect to be directed by you in your
' Precepts.

' I know you will advise us, and justly indeed
' to exercise the Body, to walk and to travel, in
' order to correct what is thrown in superfluously,
' or faultily digested; you will recommend to us
' Chearfulness and the Unbending of the Mind,
' in order to dispel the Queaziness we have con-
' tracted, as *Seneca* likewise advises; you will di-
' rect us to indulge the Mind, and spare some lei-
' sure Hours which will serve instead of Aliment
' and Strength; to walk in open Places, and in a
' free Air, that the Mind may enlarge and raise
' itself by contemplating a Variety of Objects;
' and sometimes to ride or be carried in a Coach;
' to travel and change the Climate, these being
' apt to add Vigor to the Mind.

' It is true, these Advices are all very reason-
' able, and Holy-days were appointed by public
' Authority for that End, that Men might be
' forced, as it were, to be chearful, and to unbend
' the Mind. But, pray consider the Hardship of
' our Condition, for we are like the Slaves who
' are never free from Work. Upon such Holy-
' days we change our Business indeed, but do not
' lay it aside. Then must we go Abroad and hear
' Depositions; or, if a Case could not be decided

' in

'in Court in the ordinary Days of Sitting, we are 'forced to give a Hearing at Home in the Holy-'days.

'Then the Court of Vaſſalage claims a Right 'to Part of the Holy-days; another Part is claimed 'by the delegated Cauſes, the Frequency of which 'is now reſtrained by a very wholſome Conſtitu-'tion. There is always ſome Croſs or other which 'takes up our Time.

'One of our Order applies to us that Character 'of *Euripides*; *We are the Slaves of the Public, and 'our Lives are in the Hands of the People.* We 'have ſeen Men of the moſt robuſt and almoſt in-'vincible Conſtitutions ſink under the Burden of 'this Office upon the very firſt Approach of Old-'age; and it is but reaſonable, that their Miſ-'fortune ſhould teach us to be wiſe. We ought 'to allow an honeſt Retreat to Old-age, as being 'the only Holy-days of our Lives. We ought 'firſt to retrench ſome Part of our Buſineſs, and 'then, if poſſible, bid a total Farewel both to the 'Bench and to the Court. The firſt and the mid-'ling Periods of our Age we ſacrifice to the Pub-'lic: And why ſhould not the latter be beſtowed 'upon ourſelves? No Man is born abſolutely for 'another, who muſt die for himſelf. Let us be-'gin, ſaid the *Roman* Sage, to moor our Ships in 'Old-age. We have lived in Straits, let us die 'in a Harbour: Nay, the very Laws teach us as 'much, for they abſolve a Senator and allow him 'to lay down his Gown in the Sixty-fifth Year of 'his Age.

'*Cæſar Auguſtus* pleaſed himſelf with nothing 'more than talking of the Proſpect of Eaſe and 'Leiſure in his Old-age, with the Hopes of which 'he mitigated all his Cares. But his Wiſhes went 'no further than his Words. Others have boaſt-

'ed

'ed of the ſame Hopes among their Friends, and 'yet have coveted new Dignities in their Old-age, 'and at laſt, upon the View of Mortality, com-'plained that they only courted a Title to their 'Grave.

'*Spurinna*, the Friend of *Pliny the Younger*, 'acted with much more Prudence, who, after he 'had bore Magiſtracies and governed Provinces, 'founded a Retreat in his Old-age, and prolonged 'his Life for many Years by Eaſe and moderate 'Study.

'*Similis* one of *Adrian*'s Governors, after he 'was diſmiſſed, lived ſeven Years in Peace and 'Quiet in the Country, and ordered the following 'Inſcription to be put upon his Tomb: *Here lies* 'Similis, *who reckoned many Years of Age, but lived* '*only ſeven.*

'Our own Age affords us an eminent Example 'of this Kind in *Achilles Harley*, Preſident of '*France*, who choſe rather to lay down ſuch an 'ample Dignity in his Old-age, than to ſink un-'der it; and accordingly, in the ſeventy-ſeventh 'Year of his Age, he quitted all public Buſineſs, 'and retired to the Country to prepare himſelf for 'a better Life, by the Exerciſes of Chriſtian Of-'fices; and it pleaſed the Almighty to allow him 'a five Years Retreat, that his laſt Hour might 'not overtake him in the Hurry of his Buſineſs. 'The Death of this great Man is related more at 'large by *Gramont* in his Hiſtory.

'With ſuch Examples and ſuch Thoughts I 'ſometimes pleaſe myſelf, and, when I am quite 'ſpent and worn out with Fatigue, I comfort 'myſelf as if I were already poſſeſſed of the Eaſe 'and Quiet I ſo much longed for.

'O

' *O rus, quando ego te aſpiciam, quandoque licebit*
' *Nunc veterum libris, nunc ſomno & inertibus horis*
' *Ducere ſollicitæ jucunda oblivia vitæ.*

' But I perceive I have digreſſed too long. I ' leave you therefore to call up your *Æſculapian* ' Spirit, and purſue the Province you have pitched ' upon, without giving yourſelf the Trouble of ' entering the Liſts with the *Moligus's*, *Hyperus's*, ' *Horſtius's*, *Primeroſius's*, and ſuch other obſcure ' Men, who want to raiſe their Reputation by ' ſuch Diſputes, while they can neither add to, ' nor detract from your Fame. You have out-' ſtripped ſuch Muſhrooms very far long before ' now. I ſalute all the Collegiates who are my ' Friends.

' *Bruſſels, Jan.* 2,
' 1662.'

Such was the accurate and learned Account of the Miſeries of this Sort of Life, which this great Lawyer gave to the greateſt Phyſician of his Age, when he was about to publiſh that excellent Piece of his, *de Togatorum Valetudine Tuenda:* And indeed I muſt own, that all the famous Lawyers and Miniſters of State, whom ever I had Occaſion to know, were all upon the ſame Strain.

The Phyſicians fare much better, I mean thoſe of them who run about and viſit their Patients, and mind chiefly the Practice of Phyſic, for they are not ſubject to ſuch a Train of Diſeaſes; and, if they happen to be ill, they owe their Illneſs not to a ſtanding or ſedentary Life, but to their conſtant Walking and Running about.

I have often wondered how it came to paſs, that, when epidemical Diſeaſes, ſuch as malignant Fevers,

vers, Pleuriſies and other popular Sickneſſes, were raging all about, the Practitioners of Phyſic eſcaped free by a certain Privilege as it were tacked to their Profeſſion: And, upon mature Conſideration I am of Opinion, this good Luck is owing to their Caution, to their great Exerciſe, and to the Chearfulneſs of their Mind, when they return with full Pockets from viſiting their Patients. In earneſt, I never obſerved the Phyſicians to be ſo much out of Order, as when no body elſe is ſick: And this I have ſeen verified in a particular Manner theſe laſt five Years, which have been very healthy, without the Appearance of any epidemical Diſtemper.

However, Phyſicians do not always eſcape with Impunity; for I know a great many who have catched Ruptures by their conſtant Fatigue and climbing of Stairs. Beſides, when Dyſenteries are common they uſe to be dyſenteric, which perhaps is owing to their ſitting a long Time by the Patient, and receiving the morbific *Miaſma* at the Mouth, or any other Part; and for that Reaſon ſome are ſo cautious as only to ſtand, and avoid ſitting or ſtaying when they viſit dyſenteric Perſons.

A long Train of Diſeaſes is likewiſe entailed upon the Studies of Poets, Philologers, Divines, and, in fine, all Writers, and the other Retainers to Learning who are chiefly imployed in the Functions of the Mind. Above all, it goes hardeſt with the Poets, who, by reaſon of the fantaſtic Ideas always preſent to their Minds both Night and Day, are timerous, moroſe and very lean, as their Aſpects teſtify.

Our *Arioſtus* confeſſes in his Satires, that he had a very meager Conſtitution; and, if you mind his Picture, his Face looks like the ghaſtly withered Face of an Hermit: And the Conſtitution of the other

other celebrated Poets is ſaid to have been the ſame.

It is ſaid, that *Ludovicus Caſtelvetrus*, a famous Philologer, was ſo very thin and lean, that *Hannibal Carus*, his Rival, derided him under the Title of a meagre Goat. We read in Hiſtory, that thoſe who have a Superiority of Genius, and are cried up as great Maſters of Wit, Ingenuity and Learning, are ſuddenly carried off by a certain evil Fate and Malignity of Fortune. *Picus*, juſtly admired for his Learning, died an immature Death, at *Florence*, at 30 Years of Age, to the great Detriment of the Republic of Letters: And, though the Cauſe of his Death is variouſly related, it is generally believed, that it was occaſioned by his perpetual Labour and ſitting up a Nights; for one would wonder how he had Time to write any Thing, ſince he had read ſo many Authors, as it appears from his Works which are extant.

The *Mathematicians*, whoſe Minds muſt of neceſſity be abſtracted from the Senſes, and cut off in a manner from all Commerce with the Body, in order to contemplate and demonſtrate the abſtruſeſt Things which lie moſt remote from Matter, are almoſt all ſtupid, ſlothful, lethargic, and perfect Strangers to human Converſation, or the Buſineſs of the World. So that all the Parts of their Body muſt needs droop with a ſluggiſh Stupidity, juſt as if they were chained up in perpetual Darkneſs: For, while the Mind is intent upon that ſort of Study, all the animal Spirits retire to the Center, and ſo none are ſpread abroad for the Benefit of the external Parts: That Saying of *Hippocrates* * (*Lux orco, Tenebræ Jovi*) being juſtly applicable to them; for, while the Spirits are imployed in the

* Lib. *de Diæt.* n. 5.

the inner Parts of the Brain, the external Parts cannot but droop and languiſh.

Upon the whole, conſidering how much the Health of wiſe and learned Men contributes to the Intereſt and Good of the Republic, it is proper that Means ſhould be thought upon for preſerving their Health as much as poſſible, and retrieving it when it is loſt. For this end, we ought firſt of all to conſult the Authors who have wrote on purpoſe for the promoting of their Health, as *Plutarch de Præceptis Salubribus*, *Marſilius Ficinus de Studioſorum Valetudine Tuenda*, and *Fortunatus Plempius* his applauded Piece *de Togatorum Valetudine Tuenda*. In theſe Authors we meet with very neat Preſcriptions both for preventing and curing the Diſeaſes they are uſually ſubject to.

The chief Thing to be minded is a due Regimen in the uſe of the ſix Non-naturals. In the next Place they muſt take Care to live in a pure wholſome Air, at a diſtance from Lakes and Pools, and without being expoſed to the South Winds: For by this Means the animal Spirits, the chief Inſtruments of intellectual Operations, will be the purer.

I have often wondered indeed, what could induce *Plato* to fix his academic Lectures at a Place not far from *Athens*, which was reckoned not only unhealthy but peſtilential, unleſs it be that he had the ſame View with *Bernard* Abbot of *Clareval*, who choſe to build his Monaſteries in unhealthy Places, that the Monks being ſickly and tender might be more obedient to the Rules of the Houſe, and leſs addicted to Pleaſure. But let *Plato*'s Motive be what it will, undoubtedly the Spirits are blunted and clouded by a groſs Air, and the happieſt Genius's flouriſh in ſuch Places as enjoy a purer and more temperate Air; as that of *Naples*, and that of *Athens* in antient Times; whereas the Inhabi-

Inhabitants of *Bœotia*, where the Air was thick and foggy, were reckoned dull and heavy.

They ought likewiſe to go into the Country and breathe in a free Air; nay, it will be of uſe to them to diverſify their Way of Living, by being ſometimes in the Country and ſometimes in Town, and ſo intermixing Company with Solitude, for the former makes us long to converſe with ourſelves, and the latter gives us a Reliſh for the Converſation of Mankind. They muſt take care not to expoſe themſelves to high Southerly and Northerly Winds, and to guard their Body, eſpecially the Head, from the Winter Cold.

Cuſtom has now prevailed ſo far, that all ſorts of Men, whether old or young, bald or well provided with Hair, make uſe of Periwigs like Caſes for the Head. And indeed Experience teaches us, that Periwigs are a healthy and a ſeaſonable Guard for the Head, when it becomes bald through Old-age, or any other Cauſe. Beſides, I have adviſed a great many who were troubled with Defluxions upon the Throat and Teeth to wear Periwigs, who found them an effectual Cure, inſomuch that without them they had loſt all their Teeth.

Neither is this ſort of Cover for the Head a late or new Invention, for in antient Authors we find mention made of a *Petaſus*, *Galerus* and *Galericulus*, which were Caps made of Skins with Hair ſewed upon them, ſo as to imitate the natural Hair. Such Caps were uſed both by the Men and the Women to cover their Baldneſs, or their grey Hairs, or elſe by way of Ornament when they went abroad. Hence *Juvenal* * ſays of *Meſſalina*, *Claudius*'s Wife.

Et

* *Sat.* 6.

Et nigrum flavo trinem abſcondente galero,
Intravit calidum deteri Centone Lupanar.

I reckon the Uſe of Periwigs very convenient and wholſome for Men of Learning, as being proper to guard the Head from the Injuries of the Air, eſpecially in Winter; and, abating for thoſe of Religious Orders, who by the Rules of their Order are prohibited to wear Periwigs, I find few of the learned Claſs, who have not good large Periwigs upon their Heads, when they walk along the Streets, with their Locks nicely frizled and curled, as *Plautus* † facetiouſly terms it. Add to this, that when a Man of Learning, though old and ſtooping to the Ground, ſees himſelf in a Looking-glaſs, with his Face clean and cloſe ſhaved, his Skin ſmooth and well waſhed, and his Periwig hanging ſnug about his Ears, he rejoices within himſelf, and chears up under the Hopes of long Life.

In antient Times the Profeſſors of Learning, eſpecially the Philoſophers, gloried in their long Beards and bald Pates, as being the Badges of Wiſdom: But now the Tables are turned, and almoſt all the ſecular Profeſſors are ſo neat and ſpruce when they walk abroad, that you can ſee neither Beard nor grey Hairs. This reminds me of that noted Saying of the *Ægyptian* Prieſt, in his Conference with *Solon* ‡: *O Solon! Solon! you* Grecians *are always young, and there never comes an old Man out of* Greece.

But we are not only taught by Experience, that ſuch artificial Periwigs are very convenient and healthful for learned Men when they draw towards Old-age, for Reaſon ſuggeſts the ſame Thing.

† *In Captiv.* ‡ *Plat. in Tim.*

And, ſince the Providence of Nature has guarded the Heads of young Perſons with thick Hair, ſince the very Children come from their Mothers Womb with Hair upon their Heads, ſince young People who are warmed with the Vigour of Age are not annoyed with the Weight of their Hair, but find it eaſy and convenient, why ſhould not old Men, whoſe native Heat fails, provide for the Safety of their bald Skulls with an artificial Cover of Hair, rather than Caps of Leather or Silk? *Plempius* * writes, that *Marſilius Ficinus*, a *Platonic* Philoſopher was ſo whimſical in the uſe of Caps, that he changed them ſeveral Times a Day, according as the Wind blew, or as the Air was hotter or colder, which was certainly a pernicious Cuſtom. So that the Hair-covers or Periwigs are much preferable, conſidering that we are allowed to keep them on in Churches, and in the Preſence of Princes.

As for the Diet of learned Men, let that Precept of *Hippocrates* be their Oracle, *Sanitatis Studium eſſe, non repleri Cibis.* They muſt take care not to cram their Bellies quite full, and abſtain from Variety of Meat, for that uſes to occaſion bad Chyle, and excite Commotions in the Belly; according to thoſe Verſes of *Horace*,

——— *Cum ſimul aſſis*
Miſcueris elixa, ſimul Conchylia Turdis,
Dulcia ſe in Bilem vertent, Stomachoque tumultum
Lenta ferat Pituita ———

So that the Stomach muſt be narrowly looked after, for fear it be remiſs in its Functions, and ſo affect the whole Body. *Ficinus* recommends Cinnamon and the Uſe of aromatic Things for fortifying

* *De Togat. Val. Tu.* c. 3.

tifying the Stomach. In the Age we now live in Chocolate is mightily in vogue among the learned World, as being comfortable to the Stomach and Spirits; and, conſidering that ſtudious Perſons are either naturally, or by acquired Habit, melancholic and abound with Acidity, theſe balſamic and ſpirituous Potions may ſerve to correct the Acidity both of the Stomach and the Blood, and amend their Conſtitution.

As for their Drink, Wine is preferable to all other Liquors; I mean pure Wine drank in ſmall Quantities. I know very well, that a great many learned Men, who want to waſh their Throat plentifully, make uſe of ſmall White Wines by the Conſent and Advice of their Phyſicians, preſuming they may drink of theſe ſafely, and to what Quantity they will. But this Practice is not ſo ſafe as they imagine; for theſe ſmall Wines aſſume a ſort of Acidity, eſpecially in Summer, and nothing can be more pernicious than that, to ſuch Conſtitutions as labour under a luxuriant Acid.

Crato ſays *, *Thoſe who have a weak Stomach had better drink a little Hungarian or Malmſey Wine, than ſwill down great Quantities of ſmall Wines.* And *Helmont* † ſays, thoſe ſmall Wines contain a great deal of Vinegar, and but little Wine. It is manifeſt therefore, that ſtudious Perſons, ſubject to arthritic Pains, cholic Pains, and hypochondriacal Diſorders, all which take Riſe from a morbific Acid, ought by no means to make uſe of Acids, but to have recourſe to ſuch Things as break and enervate the Acid.

In regulating their Conduct as to other things, they ought to avoid the Inconveniencies of a ſeden-

* Lib. 2. *Conſ.* 27. † *In Volup. niv.*

tary and a ſtanding Life, to exerciſe the Body moderately every Day, provided the Air be clean and calm; to make frequent Uſe of ſoft Frixions for preſerving and promoting Perſpiration; and to bathe in ſweet Water, eſpecially in Summer, at which time they are moſt apt to be choleric; for by that Means the Acrimony of the Humours is corrected, and the rough Viſcera are ſoftened. The moſt convenient Time for bathing is the Evening; after which it would be proper to eat, and ſo go to Bed; for ſuch was the Cuſtom among the Antients: And accordingly *Homer* ſays,

Ut lavit, ſumpſitque cibum dat membra ſopori.

The Morning is uſually recommended as the moſt convient Time for Study, as the Night Hours, and eſpecially thoſe after Supper, are improper for that Exerciſe. *It is a monſtrous Way*, ſays *Ficinus* *, *to ſit up late a Nights, and ſo to be forced to lie a Bed after the Sun riſe*; and this he ſays is the Fault of many Students; the Perniciouſneſs of which he confirms by ſeveral Reaſons; ſome drawn from the Poſition and Configuration of the Planets; others from the Motion of the Elements, while the Air thickens upon the Setting of the Sun; others from the Humours themſelves, Melancholy being moſt prevalent at Night; and others again from the Order of the Univerſe, by which the Day is appointed for Labour, and the Night for Reſt. So that learned Men, who purſue their Studies in the Night-time, act in Oppoſition to all theſe Arguments.

But, in adjuſting this Matter, a due Regard muſt be had to every one's Uſe and Cuſtom; only

* *De Stud. Val. ctad. l.* 1. c. 7.

y *Celſus*'s Caution * muſt always be minded, which is, that they ought not to ſtudy immediately after Eating, but after the Concoction is over. The eminent Cardinal *Sforția Pallavicinus*, a Man of great Learning, uſed to dedicate the whole Day to his Study without Eating, after which he eat a little Supper, and, laying aſide his Studies, ſet apart the whole Night for Sleep, and the Repairing of his Strength.

But, after all, there are ſome Men who prefer the Night to the Day, and account the ſecret Receſſes and Silence of the Night more favourable for Study. *Gellius* writes †, that *Euripides*, the Author of the Tragedies, uſed, when he was compoſing any Tragedy, to mew himſelf up in ſome dark diſmal Cave in the Iſland of *Salamina*. In like manner ‡ *Demoſthenes*, that great Orator, uſed to retire to a Place where he could neither ſee nor hear any thing, for fear his Eyes ſhould divert his Mind.

When we apply ourſelves to Study, we ought not to ſit in little cloſe Cells or Cloſets as ſome do, eſpecially in Winter to avoid the Cold, but in a large Room, provided the Body be well covered with Clothes; for the Smoak of the Lamp or Candle, as well as the Exhalations which fly continually from the Body and the Mouth, quickly fill up a narrow Space, and render the Air not only unfit for Reſpiration, but even hurtful, and withal affect the Head, eſpecially if we uſe Tallow Candles, which, by their Stink and ſmoaky Exhalation, taint the Stomach and the anterior Ventricles of the Brain, as *Plempius* obſerves in his admirable Piece *de Togatorum Valetudine Tuenda*.

* Lib. 1. c. 2. † Llb. 15. c. 20.
‡ *Quintil. li* 10. *Inſtit. de Mod. ſcrib.*

To this Purpoſe is that Oracle of *Hippocrates* *, in which he commends Sleeping in *frigore cooperto*, which the learned *Valleſius* makes to import, that it is more conducive to Health to ſleep in a large Room with the Body well covered up, by Reaſon of the Inſpiration of purer Air: And by a Parity of Reaſon, I reckon it more conducive to the Health of ſtudious Perſons to ſtudy, in a large than a little Room or Cloſet, notwithſtanding the Winter Cold, provided they are *cooperti* as *Hippocrates* ſays.

When learned Men are taken ill of the above-mentioned Diſeaſes, ſuch as nephritic, colic and arthritic Pains, which are the Plagues of Students, they muſt have recourſe to ſuch Remedies as are calculated for theſe Diſtempers, of which they may meet with great Store in all practical Authors, it being contrary to our Deſign to ſwell this Treatiſe with Receipts. However, I cannot forbear to mention a new Remedy lately found out for the Gout, or arthritic Pains, called the *Sugar of Milk*, invented by the excellent Dr. *Teſti*, a Phyſician at *Venice*, and recommended by ſucceſsful Experiments; of which there was a Book publiſhed in the Year 1698, at *Venice*.

Becauſe learned Men are generally peeviſh and moroſe, and oftentimes importune the Phyſicians to preſcribe them Remedies, particularly Purgatives and Phlebotomy, I ſhall here communicate what Experience and Obſervation has taught me in this important Matter. I know by Experience, that learned Men bear even ſtrong and repeated Purgation better than Bleeding, though it be done but ſparingly. And this Obſervation is backed by Reaſon: For, ſince their Stomach abounds with acid

* 4. *In.* 6. *Epid. t.* 13.

acid Crudities, by reaſon of their reſtleſs Nights, of the Intemperance of their Studies, and the with-drawing of the Spirits to other Parts, cathartic Medicines, though of the ſtronger Form, are enervated by that luxuriant Acid, and if they are too mild they rather excite Commotions than make any Evacuation: But upon all theſe Accounts a Phyſician muſt be very cautious in weighing maturely the Habit, Strength, and Diſeaſe of the Patient.

The ſame Thing is obſerved in Children, in whom the Redundancy of an Acid often eludes ſtrong Purgatives: For it is well known, that nothing impairs the Alkaline Force of Cathartics ſo effectually, as what is obtained from acid Subſtances.

As for Bleeding, though in ſmall Quantity, it cannot but impair their Strength, and eaſily ſinks the Spirits which are already palled with Watching and the Fatigue of Study. We read in the Life of *Gaſſendus*, that this Famous Philoſopher was killed by the repeated Phlebotomy, which is ſo cuſtomary among the *French*.

It is remarkable, that the learned Men of Religious Orders, who are of thin, ſickly Conſtitutions, uſe frequently to purge and vomit with the Powder of *Cornachina*, *emetic* Wine, and the like, and that to ſome Advantage: But they tremble when you talk to them of Bleeding; for they know very well, that what affects them is a Load of Humours lodged in the Stomach, that the vital Strength of the Blood is languid and palled.

The Profeſſors of Learning ought therefore to purſue the Study of Wiſdom with Moderation and Conduct, and not to be ſo eager upon the Improvement of their Mind, as to neglect the Body: They ought to keep an even Balance, ſo that the

Soul and the Body may like Landlord and Gueſt obſerve the due Meaſures of Hoſpitality, and do mutual Offices, and not trample one another under Foot.

It is a pleaſant and witty Saying which *Plutarch* tells us *Democritus* * uſed to have, 'That if the 'Body and the Soul were to ſue one another for 'Damages, it would be a doubtful Queſtion 'whether the Landlord or the Gueſt were moſt 'faulty.' And indeed we ſeldom find a juſt Moderation between them; for if we are too intent upon ſtrengthening the Body, by craming it, we bring the Soul to the Ground; and if, on the other hand, we bend all our Force upon the Improvements and Ornaments of the Mind, the Body waſtes and decays: So that *Plato*'s Caution is very juſt, which is, *That we ought not to exerciſe the Body without the Soul, nor the Soul without the Body.* I ſhall conclude this Chapter with a pleaſant and ſmart Paſſage of *Plutarch* in his Book *de Præceptis Salubribus*, which he writ, as he declares himſelf for the Benefit of ſtudious Perſons and Politicians: 'The Ox ſaid to his fellow Servant the 'Camel, which refuſed to bear part of his Bur-'den, *In a little Time it will be your Turn to carry 'all my Burden inſtead of a part:* Which accord-'ingly came to paſs upon the Death of the Ox.' Now the ſame is the Caſe of the Soul, which refuſes to unbend and allow the Body the Relaxation and Eaſe it requires, and ſoon after, upon the Invaſion of a Fever, or Vertigo, the Books, Diſputations, and Studies are all laid aſide, and the Soul is forced to labour under Sickneſs along with the Body.

* *De Præcep. ſalub.*

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SUPPLEMENT.

CHAP. I.

Of the Diſeaſes of PRINTERS.

'TIS ſufficiently certain, that the Antients were unacquainted with the Art of Printing, ſince they only recorded Facts, and tranſmitted Events to Poſterity, by means of Writers and Amanuenſes; for Printing was only invented in the fourteenth Century, to the great Detriment of vaſt Numbers of Men, and eſpecially of the Monks, who after Divine Service employ'd their Time in tranſcribing Copies for the Uſe of the Virtuoſi and Literati. The Art of Printing is ſtill unknown in *Turky*; and *Cornelius Magnus*, who travell'd through the Eaſtern Countries, informs us in his Letters, that when a Motion was made for introducing it in the Divan at *Conſtantinople*, a popular Inſurrection was like to have happen'd. Various Arguments may be adduced both for and againſt Printing; and the ingenious *Boccalini*, in his Novelties of *Parnaſſus*, tells us, that when the Inventor of Printing haughtily appeared upon Mount *Parnaſſus*, demanding a Place among the Literati, he was repulſed with Infamy as a Corrupter of uſeful Arts and Sciences. But without any farther Enquiry into the Origin and Progreſs of this Art, we ſhall proceed to conſider the Diſeaſes incident to thoſe who profeſs it.

Printers then are diſtinguiſh'd into two Claſſes, namely, *Compoſitors*, who without almoſt moving ſet the Types, and after the Form is work'd off, diſtribute the Letters into their proper Boxes; and *Preſs-men*, who continually ſtand. The former are ſubject to all the Diſeaſes incident to a ſedentary Life, and the latter afflicted with all the Diſorders produced by ſtanding and exceſſive Labour; for by working at the Preſs the whole Body is violently exerciſed: So that Preſs-men are not only ſubject to Laſſitudes and Fatigues, but alſo obliged to quit their Buſineſs when they become old. The Compoſitors alſo, by having their Eyes perpetually fix'd on the black Types, contract a Weakneſs of Sight, and become ſubject to Cataracts and other Diſorders of the Eyes. I know two Brothers, Printers, with Eyes naturally large and prominent, who were forced to quit the Buſineſs leſt they ſhould become blind. I alſo remember, that, by ſitting ſome Hours with a Printer in order to correct a Work of my own, when I went out of the Printing-houſe, I perceived the Types as it were fluctuating before my Eyes, and even in the Night-time had the Images of them repreſented to my Imagination, becauſe I had view'd them ſo long, and with ſo much Attention. By having the Eyes continually fixed then upon the black Types, whether in compoſing or diſtributing Letter, the Tone of the Membranes and Fibres of the Eye, and eſpecially of the Pupil, is greatly weaken'd; ſo that 'tis no wonder Printers ſhould be ſubject to Diſorders of the Eyes. The Compoſitors themſelves inform us, that when they come abroad at Night, after working the whole Day, the Images of the Types ſeem to be imprinted

imprinted on their Imaginations, and there remain for some Hours, till they are effaced by the Representations of other Objects.

Besides the Diseases of the Eyes, Printers are also subject to other Misfortunes, such as continual Fevers, Pleurisies, Peripneumonies, and other Diseases of the Breast; for as Printers are in the Winter-time confin'd for whole Days in close Places, and often expos'd to excessive Heats in drying the Paper, when they come abroad in the cold Air, their Skin is easily constricted, Perspiration obstructed, and the above-mentioned Disorders brought on, especially in Press-men; for as their Business requires great Efforts of the Arms and whole Body, they are frequently cover'd with profuse Sweats, and in that Condition expose themselves to the cold Air, in consequence of which they are very subject to these Disorders.

The most proper Expedient Printers can use for the Preservation of Health, is to allot a few Hours of each Day for some salutary Exercise, and to be warmly cloth'd when they go abroad in the Winter-time. Compositors ought also to use Spectacles, in order to preserve the Tone of the Eye, to turn their Sight frequently off the Types, and gently rub their Eyes, in order to rouse their languid Spirits, and to wash them with Water of Eye-bright, and others of a like Nature. When Printers are seiz'd with acute Disorders, they are to be remov'd by the Remedies adapted to their peculiar Natures and Causes; only 'tis an Advantage to the Physician to know, whether the Patient has work'd at the Case or the Press.

CHAP. II.

Of the Diſeaſes of WRITERS *and* AMANUENSES.

THO' Writers and Amanuenſes were far more numerous among the Antients, who were ignorant of the Art of Printing, than at preſent; yet 'tis certain that in each City and Town, vaſt Numbers of Perſons ſtill earn their Bread by writing. The Diſeaſes of Perſons incident to this Claſs, ariſe from three Cauſes; firſt, conſtant Sitting; ſecondly, the perpetual Motion of the Hand in the ſame manner; and thirdly, the Attention and Application of the Mind. Now 'tis certain that conſtant ſitting produces Obſtructions of all the Viſcera, eſpecially of the Liver and Spleen, Crudities of the Stomach, a Torpor of the Leggs, a languid Motion of the refluent Blood and Cachexies. In a word, Writers are depriv'd of all the Advantages ariſing from moderate and ſalutary Exerciſe. Conſtant writing alſo conſiderably fatigues the Hand and whole Arm, on account of the continual and almoſt tenſe Tenſion of the Muſcles and Tendons. I knew a Man, who, by perpetual writing, began firſt to complain of an exceſſive Wearineſs of his whole right Arm, which could be remov'd by no Medicines, and was at laſt ſucceeded by a perfect Palſy of the whole Arm. That he might ſuſtain as little Loſs as poſſible by that Accident, he learn'd to write with his left Hand, which was ſoon after ſeiz'd with the ſame Diſorder. But what

what is worſt of all, is, the continual and intenſe Application of Mind; for in writing, the whole Brain with its Nerves and Fibres are highly tenſe, and a Privation of their due Tone ſucceeds. Hence ariſe Cephalalgies, Stuffings of the Head, Hoarſeneſs, and Defluxions of the Eyes, produced by continually looking on the Paper. Theſe Misfortunes are principally incident to Philoſophers, Arithmeticians, Merchants Clerks, and Secretaries, whoſe Minds are often perplex'd with a Multitude of Letters, and the variety of the Subjects on which they write.

In order to repair the Damages ſuſtain'd by a ſedentary Life, Writers ought to uſe moderate Exerciſe as often as their Situation will permit. Nothing is alſo more beneficial for ſuch Perſons, than frequent Frictions; which, as *Celſus* in *lib.* 2. *cap.* 14. tells us from *Hippocrates in Chir. Offic.* N°. 11. produce contrary Effects. "If, ſays he, "the Friction is violent, it indurates the Body; "if gentle, it ſoftens it; if long continued, di-"miniſhes it; but if moderate, augments and "enlarges it." If the Signs of a beginning Obſtruction of the Viſcera appear, 'tis expedient to purge with ſome Laxative, and in the Spring and Autumn to make univerſal Evacuations. In order to prevent or remove the Wearineſs of the right Arm and Hand, nothing is more proper than gentle Frictions with Oil of ſweet Almonds, to which a ſmall Quantity of Aqua-vitæ may be added. In the Winter-time Writers are to take care that their Hands be not render'd torped by the intenſe Cold, for which Reaſon they ought to wear warm Gloves. In order to preſerve the Head from the Misfortunes to which it is ſubject, I recommend all Cephalics, eſpecially thoſe poſ-

ſeſs'd of a volatile Salt, ſuch as Spirit of Sal-ammoniac, the Smell of which alone is capable of removing the Torpor of the Brain, which is alſo to be purg'd. Proper Doſes of the Pilulæ Cratonis are to be exhibited, and Maſticatories and Ptarmic Subſtances uſed; which, by exciting Sternutation, drive the ſerous Humours from the Glands of the Brain. Among the Maſticatories, Tobacco moderately uſed is highly beneficial. The Body is to be kept ſoluble by ſoft Aliments, and if theſe don't produce the deſired Effect, laxative Clyſters are to be injected; for, according to *Hippocrates in* 6 *Epidem*, "Conſtipation produces "univerſal Confuſion, a ſordid State of the "Veſſels, and the Conſumption of the Brain."

CHAP. III.

Of the Diſeaſes of CONFECTIONERS.

THO' recent Fruits, ſweet Almonds, Piſtachio-Nuts, Pine-Apples, and various Seeds, ſuch as thoſe of Fennel, Coriander and Worm-ſeed, preſerved with Sugar, are ſufficiently grateful to thoſe for whom they are prepar'd; yet various conſiderable Diſorders are brought upon the Perſons employ'd in this Work, in which a large Braſs Pan is ſuſpended by Ropes over a Stove full of live Charcoals; ſo that the Perſon who agitates this Pan muſt have his whole Face above the Heat and the exhaling Spirits, and if he works conſtantly, becomes ſubject to Cephalalgias, Pains of the Eyes, and Difficulty of Breathing.

Three

Three Things are principally injurious to Confectioners, the Charcoal, the hot Pan, and the Sugar; with reſpect to the firſt, St. *Auguſtine in lib. de Civitate Dei*, ſpeaks in the following manner; "Charcoals are of a ſurprizing Nature, ſince "they are ſo weak as to be broken by the gentleſt "Stroke, or moulder'd down by the ſlighteſt "Preſſure, and yet ſo ſtrong that they cannot be "corrupted by any Liquor, or conſum'd by any "length of Time; ſo that to prevent Diſputes, "'tis cuſtomary to ſtrew them on Ground in or-"der to aſcertain particular Boundaries." But ſtill more ſurprizing is the peſtilential Quality by which their Smoak almoſt in a Moment deſtroys Perſons Lives, unleſs they get out of it. Tho' we cannot account for this ſuffocative Quality of Charcoal, ſince other Coals, even in a cloſe Place, do not produce the ſame Effect, there are however many fatal Inſtances of its peſtilential Virulence. *Helmont in lib. de jure Duumviratus*, tells us, that in the Winter-time when he was writing in his Chamber, he was ſo affected with the Smoak of ſome Charcoal brought in a Stove, that he could hardly get out of the Room, and ſoon after fell down half dead. The ſame Author, for the Production of this Effect, accuſes ſomething of a wild and incoercible Nature latent in the Charcoal, and exhaled by a certain inflammable Principle there concentrated. The Pan in which the Subſtances to be confected are contain'd, retains the Qualities of the Copper, ſince Braſs is made of Copper and Lapis Calaminoris. This Veſſel then, when heated, diffuſes its contain'd Acrimony, to which the Confectioners are expoſed. The melted Sugar alſo has its corroſive Exhalations rais'd, which are the more acrid, be-

cauſe the Sugar is very white, and purified with Lime-Water. Theſe three Things therefore conſpire to induce upon Confectioners violent Diſorders of the Brain, Breaſt and Eyes; for the Head is afflicted with a violent Pain, the Eyes are often inflamed, and prick'd as it were with Darts, by the Exhalations of the Fire, and Reſpiration is injured by the acrid Particles contain'd in the inſpir'd Air. Confectioners ought therefore, if poſſible, to work at their Buſineſs in an open Place, for the Diſſipation of the corrupted Air, and to ſpend ſome Hours a-day in taking the freſh Air, after washing their Faces with Water, and their Fauces with Roſes. In order to correct the Malignity of the Charcoals, 'tis cuſtomary with moſt Confectioners to put a piece of Iron among them, ſince they perhaps ſuppoſe that the malignant Spirits of the Charcoal exert their Force on the Iron, or that the Iron abſorbs them.

CHAP IV.

Of the Diſeaſes of Men and Women employed in Weaving.

THE Uſe or rather the Neceſſity of Weaving is evinced from this, that the Inhabitants of moſt Nations lie under a Neceſſity of uſing ſome woven Subſtance in order to cover their Nakedneſs; nor ought we to reflect upon Providence for having given Birds Feathers, and moſt other brute Animals Hairs as a Covering and Defence, ſince in Man this Defect is ſupplied by Ingenuity, and

and the Uſe of the Hands, by which he can provide various Kinds of Garments, both for Ornament and Uſe. Formerly Weaving was moſt commonly the Taſk of the Women, ſo that Ladies of Diſtinction were not aſham'd of being employ'd in this Work. Thus *Penelope*, in the Abſence of *Ulyſſes*, is ſaid to have deceived her Suiters by weaving and unweaving a Web. Thus alſo *Virgil*, in *Æneid lib.* 2. when deſcribing the Funeral of *Pallas*, mentions two embroider'd Cloaks produced by *Æneas*, and

——————Quas illi Læta laborum,
Ipſa ſuis quondam manibus Sidonia Dido
Fecerat, & tenui telas diſcreverat auro.

But at preſent the Vulgar are only employ'd in weaving, and Women of Diſtinction never learn more than the Art of Embroidery and working Flowers with the Needle. *Octavius Ferrarius*, *in lib. re Veſtiaria*, informs us, that there were two kinds of Weaving, the one far more ancient than the other, in which the Women in a ſtanding Poſture wove upwards and to the Height; and the other, in which in a ſitting Poſture they wove downwards, which he ſays was the Invention of the *Ægyptians*, who thruſt the Shuttle downwards, or drew it towards their Breaſt. At preſent the Women weave ſitting, tho' they are ſometimes obſerv'd to ſtand. This is certainly laborious Work, ſince it at once employs both Hands, Arms, Feet, Back, and all the other Parts of the Body. The Countrywomen in the Winter-time, when not employ'd in tilling the Ground, weave Linnen or Flaxen Webs; and it it is reckon'd ſcandalous for an unmarried Woman

to be ignorant of this Art, which is generally the whole of the Portion her Huſband receives with her. Weaving is then an hard and laborious Taſk, eſpecially to Women, who, if pregnant, eaſily have Abortion, and a Train of ſubſequent Calamities brought on by that Means. Women therefore employed in weaving ought to be vigorous, healthy and robuſt, otherwiſe they ſuccumb to the hard Labour, and are in their old Age forced to quit it. But beſides the Profits of weaving, Women generally reap this Advantage from it, that their Menſtruation is eaſy; for it rarely happens that Women thus employ'd have their Menſes ſuppreſs'd, but rather have them diſcharg'd too copiouſly, when they work too hard about the Time of their Approach; ſo that when young Women complain to me of the irregular or inordinate Diſcharge of their Menſes, I generally adviſe them to conſult with working Women, or thoſe employ'd in weaving, rather than with Phyſicians. Since theſe Women, fond of earning as much as poſſible, go to work immediately after their Meals, they muſt greatly injure the Stomach and Concoction; for by the exceſſive and intenſe Labour, the Fermentation is diſturb'd, an imperfect Chyle forced into the Lacteals, and the Maſs of Blood fill'd with Crudities. Weavers, unleſs very ſtrong and robuſt, are alſo generally much afflicted with Laſſitudes of the whole Body, eſpecially of the Arms, Back and Legs; for in weaving broad Cloth, two Men are employ'd in thruſting the Speel back and fore to each other, and then puſhing home the Shuttle. But Linnen and Silk Weavers are exempted from one Diſadvantage to which Cloth Weavers are ſubjected, and which ariſes from the ungrateful Smell of the Oil with

with which the Wool is moiſten'd. Thus their Bodies ſmell ſtrong, their Breath ſometimes ſtinks, and their Eyes become red, which alſo happens to all thoſe employ'd in handling Wool moiſten'd with Oil.

Weavers of all kinds, for the Preſervation of Health, ought to work but moderately, and not to Exceſs; and in order to remove the Wearineſs, gentle Frictions of the Thighs, Legs and Arms, with Oil of ſweet Almonds, are to be uſed. Cloth Weavers ought alſo to keep themſelves as clean as poſſible, and on holy Days at leaſt to put on clean Linnen, and waſh their Hands, Arms and Legs, with perfum'd Wines. As for the Shearers of the Cloth, whoſe Buſineſs is alſo very laborious, eſpecially to the Arms and Hands, they are to preſerve Health, and prevent Diſeaſes, by the ſame Means recommended for the Weavers.

CHAP. V.

Of the Diſeaſes of BRASIERS.

AMONG the various Metals dug out of the Bowels of the Earth, Iron and Braſs are of moſt general Uſe, ſince they are employ'd to far more numerous Purpoſes in Life than Silver or Gold. Thus the *Mexicans*, to whom Nature, inſtead of Iron and Braſs, has given Gold and Silver, are ſaid to have envy'd the *Europeans* who fought with Weapons of Iron and Steel. Braſs then was greatly uſed, even in the earlieſt Times, as we find from *Athenæus*, who tells us, that *Plato* and *Lycurgus* in their Republics, decreed,

that no other Metals were neceſſary to human Life, except Iron and Braſs, of the latter of which Money was coin'd. But we here conſider the Diſeaſes incident to Braſiers, and not thoſe to which Perſons who work in Braſs Mines are ſubject, ſince theſe are already treated. In every City almoſt then, Braſiers are employ'd from Morning till Night, in hammering the Braſs, and rendering it ductile, for making various kinds of Veſſels and Utenſils. By this continual and loud Noiſe, not only their Ears, but alſo their whole Heads, are greatly affected; ſo that Braſiers are generally dull of Hearing, and when they become old for the moſt part totally deaf; for the Drum of the Ear, by the continual Action of the Sound and Noiſe upon it, loſes its natural Tenſion, and the Repercuſſion of the internal Air on the Sides of the auditory Paſſage greatly weakens and ſpoils the Organs of Hearing. The like Misfortune is ſaid to happen to thoſe who live near the Cataracts of the River *Nile* in *Egypt*, ſince they are all render'd deaf by the Noiſe of the falling Water. Braſiers and Gold-beaters alſo become gibbous, in conſequence of the crooked Poſture in which they continually ſit.

Beſides theſe Diſorders of the Head and Ears, Braſiers are alſo ſubject to violent Diſeaſes of the Stomach and Lungs; for whilſt they hammer the Braſs, noxious Effluvia ariſe from it, and enter their Mouths, Stomachs and Lungs, as they themſelves confeſs. Various Medicines are prepared of Braſs, ſuch as Flowers of Braſs, Filings of Braſs and Verdigreaſe, all of which are poſſeſs'd of an emetic and corroſive Quality. The corroſive and drying Quality of the Braſs is therefore perceiv'd by Braſiers, when they inſpire it with the common Air. Perſons of this Profeſ-

ſion

ſion inform me, that theſe noxious Exhalations produce no Diſorders of the Eyes, which is agreeable to the Aſſertion of *Macrobius*, who tells us, that Lippitudes and Inflammations of the Eyes are cured by working in Braſs Mines; for which Reaſon 'tis cuſtomary with ſome Perſons to prepare Collyviums with Braſs.

The Ears may be fill'd with Cotton, in order to hinder their internal Parts from being injur'd by the Noiſe; and when they are weaken'd and concuſs'd, they may be anointed with Oil of ſweet Almonds. As for the Diſorders of the Lungs produced by inſpiring the Air impregnated with the Metalic Exhalations, they are moſt effectually remov'd by Emulſions of ſweet Almonds, or of Melon and Gourd Seeds, in Water of Violets, or Barley-Water. Whey and Milk Meats are alſo recommended for the ſame Purpoſe. But if a Braſier is naturally of a dry Conſtitution, and ſubject to Diſorders of the Lungs, nothing is more expedient than his quitting the Buſineſs and applying to ſome other; for Gain ought never to be preferr'd to Health and Life. When a Braſier is ſeiz'd with any acute Diſorder, ſuch as a Fever, it will be of Advantage to the Phyſician to know the Patient's Profeſſion; for as in acute Fevers a Ringing of the Ears often happens, the Phyſician ought not to be terrified at this Symptom, becauſe *Hippocrates* makes it a fatal Sign; for it is not ſurpriſing, that, in a Tradeſman of this kind, an uncommon Dulneſs of Hearing, and Ringing of the Ears ſhould be obſerv'd: For which Reaſon the Phyſician is immediately to attempt the Cure of the Diſorders of the Lungs by copious and moiſtening Emulſions, leſt the Dryneſs

Dryneſs of the Patient's Habit ſhould be augmented by the Violence of the Fever.

CHAP. VI.

Of the Diſeaſes of Carpenters, Joiners, and other Perſons who work in Wood.

IF we except Corn, Nature has beſtow'd nothing more uſeful upon Mortals than Trees and Woods; ſo that *Pliny in Præf. ad lib.* 12. tells us, "That the firſt Aliments conſiſted of "their ſofter Leaves, and the firſt Garments "were prepared of their Barks." But after the Uſe of the Saw was invented, Trees were cut into Boards, for the building of Houſes, and a thouſand other Purpoſes in Life. That the whole Town of *Lyons* in *France* was formerly built entirely of Wood, is not improbable; for *Seneca* informs us, that it was totally burnt in one Night; ſo that next Morning the Country People in the Neighbourhood miſſing it, were ſurprized what was become of it; and *Seneca* on this Occaſion commiſerating the Calamities incident to Mankind, exclaims, *diu Sylva, momento Cinis!* The Town which had long been a Wood, was in a Moment laid in Aſhes. And even at preſent in ſome northerly Countries whole Towns are built of Wood: Thus in *Muſcovy*, for inſtance, there are immenſely large Shops fill'd with finiſh'd Wooden Houſes of all Sizes, according to the Purchaſer's Taſte; ſo that a Perſon may there have a compleat Houſe in a few Days convey'd to the Situation he intends.

Tho'

Tho' the Workers in Wood are diſtributed into various Claſſes, ſuch as Coach-makers, Coopers, Ship-Carpenters and Carvers; yet in general all theſe Branches are laborious, and none of them more ſo than that of Sawing, which, by *Hippocrates in lib.* 1. *de Diæta*, is elegantly deſcrib'd in the following Manner; "In ſawing "Wood one Man draws and another protrudes "the Saw reciprocally; and the Man who is "undermoſt, by drawing downwards, aſſiſts the "Protruſion of him who is uppermoſt, other-"wiſe the Saw would not go downwards; but "if they uſe too much Violence, they mangle "and ſpoil their Work." The uppermoſt Perſon has the moſt laborious Part of the Work, ſince he muſt continually draw up a large and weighty Saw; whereas the undermoſt Perſon ſuſtains a conſiderable Loſs by the continual falling of the Saw-duſt into his Eyes and Mouth. Hence ariſe a Redneſs and Pain of the Eyes, for ſuch Perſons are oblig'd to wink almoſt continually.

Turners alſo, eſpecially thoſe who work on the Box, the Olive, or the Turpentine Trees, find their Buſineſs very laborious, ſince with their Hands and Arms they are continually oblig'd to hold and direct the Chiſſel, whilſt their right Foot and Leg are no leſs perpetually employ'd in turning round the Wood. They muſt alſo have their Eyes conſtantly and attentively fix'd on their Work, by which Means they are conſiderably injured, ſince by the Circumgyration of the Wood, their Spirits and Humours contract a kind of vertiginous Motion. Carpenters and Joiners receive almoſt no Harm from the Matter on which they work, except from the Cyprus Wood,

Wood, the diſagreeable Smell of which in ſome produces an intenſe Pain of the Head.

The beſt Advice I can give to Tradeſmen of this kind, in order to prevent Diſeaſes, is, not to overwork themſelves, and by that means bring on Diſorders which may for a long time incapacitate them for their Buſineſs. Soft Frictions with Oil are alſo ſalutary for Carpenters, and all other Tradeſmen fatigued with exceſſive Labour. They are alſo to preſerve and defend their Sight, by frequent Intermiſſions from Labour; and if their Eyes ſhould be ſeiz'd with a Pain or Redneſs, they are to be waſh'd with temperate Subſtances, ſuch as Barley-water, Water of Violets, and Women's Milk. When Carpenters are ſeiz'd with acute Diſeaſes from other Cauſes, the more powerful and efficacious Remedies are to be exhibited with the ſame Cautions, as to other Tradeſmen whoſe Strength is exhauſted by exceſſive Labour.

CHAP. VII.

Of the Diſeaſes of CUTLERS *and* RAZOR-MAKERS.

I AM of Opinion, that moſt Arts, in ſome Degree or other, injure their Profeſſors. Thus 'tis certain from Experience that Sword-Cutlers and the Makers of Razors and Lancets, by continually and attentively fixing their Eyes upon the Grindſtone, which is turn'd round with exceſſive Velocity, have the Tone of their Eyes impair'd, and in Proceſs of Time their Sight ren-

der'd

der'd dull. Some of them alſo, eſpecially thoſe who have weak Heads, are, after working a whole Day, not only ſubject to vertiginous Diſorders, but alſo imagine that they ſee the Stone turning before their Eyes. 'Tis probable, that by this external and occaſional Cauſe the Humours of the Eye, eſpecially the aqueous, which is naturally moveable, and the animal Spirits are put into a gyratory Motion, by which means the natural Oeconomy of the Eye is perverted. I knew a ſkilful Razor-Maker, who, after working for a whole Day, was generally afflicted with violent Inflammations and Redneſs of the Eyes, nor could he charge this Misfortune upon any other Cauſe or Circumſtance than his Buſineſs. I afterwards convers'd with other Tradeſmen of the ſame Claſs, who all complain'd of Diſorders of the Eyes. 'Tis alſo a conſiderable Labour with the right Foot, to turn the Wheel which conveys the ſame Motion to the Stone, but moſt of them have now freed themſelves from this Piece of Fatigue, by employing Boys or Men for this Purpoſe. Their Hands however and Arms muſt contract a conſiderable Laſſitude, by being ſo conſtantly employ'd; but no Parts of their Bodies are more injur'd than their Eyes, ſo that they ought to have frequent Intermiſſions from Work, and uſe the ſame Methods of Preſervation recommended for Watch-Makers and other Tradeſmen, who work upon ſmall and minute Objects.

CHAP.

CHAP. VIII.

Of the Diſeaſes of BRICK-MAKERS.

'TIS ſufficiently credible that the firſt Men had not Houſes erected by Art and Induſtry, ſince, according to the Poet,

——————Frigida parvas
Præberet ſpelunca domos, ignemq; laremq;
Et pecus & dominos communi clauderet umbra.

But afterwards Shades were made of Reeds and Straw; but theſe not anſwering the End, Cottages were erected of Stone and Mortar, and cover'd with broad Fleaks of Stone: Some of theſe are ſtill to be ſeen in wild and mountainous Places. But as in plain and inland Places, Stones could not be found for erecting Houſes, Bricks were invented for that Purpoſe. Brick-making then is an highly ſervile and laborious Work, and as ſuch was impoſed upon the *Iſraelites* in *Egypt*. We ſhall therefore conſider the Diſorders incident to Brick-Makers. As this Claſs of Men firſt expoſe themſelves to the Heat of the Sun in forming the Bricks, and then to a greater Heat in laying them in the Furnaces, their Bodies muſt neceſſarily be dry and indurated, in conſequence of which they are highly ſubject to acute Diſorders, ſuch as malignant, and frequently inflammatory Fevers; for as they are expos'd to all the Injuries of the Weather, to Cold in the Morning, to Heat

Heat in the Middle of the Day, are often wet with Rain, and live on coarſe Aliments, 'tis no Wonder they ſhould be ſubject to violent Diſorders; on the contrary, 'tis rather to be wonder'd at that they ſhould for any conſiderable Time ſupport ſo laborious an Employment. The Fevers of Brick-Makers are generally attended with a Delirium; and if they ſhould recover, they are afterwards much ſubject to chronical Diſorders, ſuch as Quartans, Cachoxies, and frequently Dropſies. As Brick-Makers are generally poor, when they are ſeiz'd with a Fever they either confine themſelves at home, and commit the Cure to Nature, or are convey'd to the publick Hoſpitals, where, with the reſt, they are treated with the uſual Remedies, ſuch as Veneſection and Purging, without the Phyſician's knowing that they are exhauſted by long and hard Labour.

In the Beginning of Brick-Makers Fevers, a Bottle of ſweet Water would prove highly beneficial for waſhing off the Naſtineſs adhering to their Bodies. And the Pores of the Skin being relax'd and open'd, a Diſcharge of the febrile Heat would be procured; but at preſent Baths are not ſo much uſed as formerly. In ancient *Rome* it was cuſtomary for Tradeſmen, after the Labours of the Day, to repair to the publick Baths, where they at once remov'd the Sordes and Wearineſs their Bodies had contracted; for which Reaſon they were leſs ſubject to Diſeaſes than our modern Tradeſmen. Perſons of all Ranks and Conditions frequented the Baths. In the Infancy of the Chriſtian Church, not only Men, but alſo Women, whether married or unmarried, uſed Baths, as is obvious from a Letter

of

of St. *Jerom*'s to *Euſtachius*, where he tells him, that if a Virgin is to uſe the Bath, either for the ſake of Cleanlineſs or Health, it ought to be in a dark Place, or by Night, becauſe the former Simplicity of the Baths had degenerated into a ſuperfluous Pomp and Luxury. *Seneca*, in Epiſt. 89. when deſcribing the Country Retirement of *Scipio*, after he had ſubdued *Africa*, ſpeaks in the following Manner: "This General, who was the Terror "of *Carthage*, waſh'd his Body when fatigued "with rural Labours; but he did not waſh every "Day, for Perſons who record the ancient Cuſ-"toms of the Town, affirm, that the Inhabi-"tants only waſh'd their Hands and Legs every "Day, and the whole Body on Holy-days." For Brick-Makers then, who are almoſt continually beſmear'd with Clay, Bathing is highly expedient both for preventing and curing Diſorders.

CHAP. IX.

Of the Diſeaſes of thoſe who work in Pits.

AS Brick-Makers are expoſed to the Heat of the Sun and Fire, ſo thoſe who work in Pits are expoſed to cold and exceſſive Moiſture, even in the Middle of the Summer; for they cannot work in the Spring and Winter, when the Earth abounds ſo much with Water. Since then the Summer is the proper Seaſon either for making new or cleanſing old Pits, every one muſt perceive to how great Danger thoſe employ'd in this Work are expoſed to, ſince they have ſo many Tranſitions

Tranſitions from cold to hot, from dry to moiſt, and from moiſt to dry. By a long Continuance therefore in thoſe Places, which are both cold and moiſt by the Collections of Water, the Pores of the Skin are eaſily conſtricted, and Perſpiration injured, which is ſucceeded by acute and malignant Fevers. Malignant Fevers may alſo proceed from another Cauſe, namely, the fetid Exhalations of Pits, eſpecially in Hills and mountainous Places, where the Sulphur, Nitre, and other Minerals, corrupt the Juices and animal Spirits of the Workmen. But in plain and low-lying Grounds the Diggers are not ſo much injured.

In the Fields about *Modena* are the celebrated Pits, which yield the pureſt and whiteſt Petroleum of any in *Europe*. On the Top of the *Feſtine* Mount is a ſmall Plain, in which are various Pits, both old and new, in which Petroleum is found floating on the Water. Theſe Pits are very deep, and can only be made with a Chiſſel and Mallet, becauſe the whole Mountain conſiſts of Flint. When a Pit therefore is ſunk, the Labourers are greatly injured by the noxious Smell with which the whole adjacent Air is impregnated; for I remember when I went to ſee the Pits, I perceiv'd the Smell of Petroleum, when I was about a Mile diſtant from them. Sometimes the Digger breaks ſome Veins of Petroleum, which flowing out copiouſly, forces him to call for Aſſiſtance in order to draw him up, for fear of a Suffocation, and after he is taken up he is for ſome time afflicted with a Difficulty of Breathing. 'Tis alſo reported, that ſome of theſe Diggers were miſerably ſuffocated by the breaking of a large Vein of Petroleum. Concerning the Petroleum of the *Feſtine* Mount, I formerly printed a Letter directed

to the Governor of the *Paduan* Gardens, and at the ſame time took Care to have the Work of *Franciſcus Areoſtus*, concerning the Petroleum of the Zebinean Hill reprinted. The Petroleum of this Hill is eaſily obtain'd, ſince in a certain deep Valley is a ſmall Pit in which it floats on the Water. But this Petroleum is red, and far inferior to that of the Feſtine Mount, which is extremely white, and of a leſs ungrateful Smell. There are other kinds of Diggers about *Modena*, who do not work in the Summer, but in the Middle of Winter. The Pits however theſe make are far different from the others, ſince they yield nothing but an highly pure and limpid Water, concerning the ſurpriſing Courſe of which I have publiſh'd a Phyſico-hydroſtatical Treatiſe. As it would be too tedious minutely to deſcribe theſe Pits, I ſhall only obſerve, that in digging them there occur alternately various Strata, ſometimes of a eretacious and ſometimes of a marſhy Earth, under which lies a ſandy Stratum mix'd with a ſmall Quantity of viſcid Subſtance; and when the Diggers come to this, they think their Work finiſh'd, ſince they then perceive the Noiſe of the flowing Water. This ſandy Stratum they perforate with a large Piercer about two or three Ells deep, upon which the Water guſhes upwards with ſuch Impetuoſity as ſoon to fill the Pit, after which it flows conſtantly. In digging theſe Pits many Curioſities are found, ſuch as large Trees, Bones, and other Subſtances.

This is an highly ſordid and laborious Employment, for ſince the Workmen are obliged to continue in theſe Pits for almoſt a Month in the Winter-time, becauſe in Summer they cannot work on account of the Exhalations, but in the

the Winter have no Exhalations, and are as warm as in a Stove, by means of their Labour and the Concentration of the Heat; and since they are frequently drawn up in profuse Sweats, they must necessarily be afflicted with all the Disorders arising from an injured Perspiration. Pit-Diggers in general are subject to Disorders of the Breast, Defluxions and Cachexies, on account of their bad Aliments, so that when they are forty or at most fifty Years of Age, they generally quit their Business and Life at the same Time.

These Labourers are to be cured, when they are afflicted either with acute or chronical Disorders, by restoring the Perspiration long obstructed in the dank Pits, by correcting and purifying the Juices, and by recruiting the exhausted Strength. It is also expedient in the Beginning to use frequent Frictions of the whole Body with *Aetius*'s Ointment, to apply Cupping-glasses, and to wash the Legs and Arms with generous Wine, in which have been boil'd the Leaves of Sage and Lavender, and the Flowers of Rosemary. Cupping also, with Scarification on the Back, is a celebrated Remedy for hard-working Tradesmen. Moderate Venesection is to be used, or the Hæmorrhoidal Veins open'd by Leeches. They are also to be purg'd, tho' very gently, lest their Strength should be too much exhausted; since, according to *Hippocrates*, in Sect. 2. Aph. 36. excessive purging is not salutary to Persons who live on bad Aliments.

CHAP.

CHAP. X.

Of the Diſeaſes of SAILORS, *and Perſons employed in Rowing.*

HUman Happineſs and mutual Commerce are by no Art more effectually promoted than by Sailing, which, by conveying the Commodities of one Country to another, may be ſaid to join the Eaſt and the Weſt, the North and the South together. This Art was formerly ſo much eſteem'd, that its Inventors were dignified with divine Honours. Thus the Argonants, who ſail'd for *Calchos*, are number'd among the Heroes, and the Ships which convey'd them, are by the Poets tranſlated to Heaven. How much then would the Antients be ſurpriz'd, if they had ſeen the Perfection to which our modern Navigation is arriv'd! Let us therefore enquire into the Diſorders incident to Sailors; by which Word I do not mean thoſe who go to Sea for the ſake of Pleaſure or Commerce, but thoſe who conſtantly work the Ship. Theſe then, as well as Rowers, and others of a like Claſs, are ſubject to acute Diſorders of all kinds, on account of their Method of Life, and the Hardſhips to which they are expoſed. They are alſo ſubject to chronical Diſeaſes, which however are not ſo long protracted as thoſe of Land-Tradeſmen. Before the Uſe of the Loadſtone was diſcovered, Navigation was a laborious Taſk, ſince in Night-time the Sailors were oblig'd to have

have their Eyes continually fix'd on the polar Star, in order to know how to direct their dubious Course, whereas by the Assistance of the Compass the Pilot steers the Helm with more Certainty and Safety.

Sailors exposed to the Fury of the Winds and Waves, the Inclemency of the Weather, and a thousand other Hardships accompanying Sailing, are most subject to acute Diseases, especially malignant and inflammatory Fevers, which do not last long, since they are soon terminated either by a bad or laudable Crisis: Nor in such Cases are Medicinal Precepts to be much regarded; but, as *Celsus* advises, efficacious Medicines exhibited with the utmost Expedition. Sailors have Medicines along with them, and Surgeons to exhibit them. Preparations therefore of Theriaca and Bezoar are above all other Things beneficial for forcing the peccant Humours from the most violent Parts of the Body, and expelling them by Sweat. These Medicines are to be exhibited in far larger Doses than to Patients at Land, because as the Aliments of Sailors are coarse and of bad Qualities, their Disorders must of course be far more malignant. *Thomas Bartholine*, quoted by *Bonetus*, in *Medicin. Septentrional.* asserts, that at Sea Medicines ought to be a third stronger than at Land, which holds true not only of Purgatives, but also of Diaphoretics, Diuretics, and all other kinds of Medicines. *Johannes de Vigo*, Surgeon to Pope *Julius* the second, has a particular Chapter on the Fevers of Sailors, where he orders the more generous Remedies to be exhibited, since 'tis to be suppos'd, that on account of their coarse Aliments, salted Fleshes, bad Bread, and half-putrid Water, their Humours are so highly pec-

cant, that the Diſorder will not yield to common Remedies. As *Bartholine* and *Johannes de Vigo* give theſe Cautions with reſpect to Perſons at Sea, during particular Voyages, how much more are they neceſſary with reſpect to the Sailors themſelves, and other Workmen, who ſpend the whole of their Lives at Sea.

But among the whole Claſs of Sea-faring Men, none are ſubject to more Hardſhips and Diſeaſes than thoſe miſerable Slaves who tug inceſſantly at the Oars of the Galleys; for when theſe Men are ſeiz'd with acute Diſorders, they are ſoon releas'd from their Slavery by a grateful and welcome Death. 'Tis however ſurpriſing to obſerve, that vaſt Numbers of Rowers, who toil both Night and Day, are nevertheleſs fat and freſh-colour'd; the Reaſon of which, according to Lord *Verulam*, in *Sylva Sylvarum*, *Cent.* 8. *Exp.* 738. is, "Becauſe a ſedentary Life in ſome "meaſure ſupports the Stomach, which is ren-"der'd penſile or hanging by much ſtanding or "walking. Hence thoſe Employments moſt "contribute to the Prolongation of Life, which "rather agitate the Limbs than the Stomach and "Abdomen, ſuch as Rowing and Sawing."

The whole Crews of Ships are ſometimes ſeiz'd with epidemic Diſorders, either from a foreign and adventitious Cauſe, the Number and Crowding of the Men, bad Aliments, corrupted Waters, or the exceſſive Frights of ſome in Storms, who being by this means ſeiz'd with malignant and peſtilential Fevers, convey the Contagion to others. In this Caſe there is no flying from the Diſorder, and the only Thing a Perſon can do is to commit the Event to Providence, tho' in long Voyages every

very Sailor ought to use Preparations of Theriaca.

Sailors are also subject to other very troublesome, tho' not so dangerous Disorders; for they are often afflicted with a violent Costiveness, which is principally owing to their coarse and hard Aliments, their smoak'd and salted Flesshes, and their Sea-Bread, which is by *Pliny* recommended for stopping Fluxes. The Costiveness of Sailors is by *Helmont* in *Blasphum* N. 36. ascrib'd to the Sea-Air and the Rolling of the Ship; for as Persons at Sea, eat a great deal more than those at Land, and discharge less by Stool, much must be dissipated and eliminated from the Body by insensible Perspiration, and Costiveness thus produced; for, according to *Hippocrates*, the Relaxation of the Skin produces such an Effect. But I think it better patiently to bear this Costiveness, than to attempt its Removal by Medicines taken internally, which would afterwards increase the Disorder, since Clysters cannot be used, nor proper Materials for them commodiously had on board Ships. Sailors are also afflicted with obstinate Watchings, on account of the vast Charge committed to their Care and Vigilance. They are also subject to pruriginous Disorders all over their Bodies, on account of the Sordes collected on the Skin by insensible Perspiration; for it is hardly possible for Men to keep themselves clean on board a Ship, since they often have not Water to wash their Hands and Faces, much less to wash their Linnens, for which Reason they swarm with Lice. Besides, there are such Numbers of Buggs on board Ships, that 'tis impossible to escape their Bites, and the disagreeable Smell proceeding from them produces a Nausea and Vomiting.

ing. Thoſe Rowers, who for the moſt part have nothing on their Feet, are ſubject to Ulcers in their Legs, which are ſqualid and dry, as proceeding from a ſalſuginous Humour. Theſe are to be cured like the ſimilar Ulcers of Fiſhermen. Sailors are alſo frequently afflicted with violent Cephalagias, eſpecially in Voyages to the *Eaſt* and *Weſt Indies*; for when they paſs the Equinoxial Line, and go from the temperate to the torrid Zone, they are ſeiz'd with violent Head-achs, and an exceſſive Uneaſineſs both of Body and Mind. For theſe Reaſons, Sailors and Sea-faring Men rarely live ſo long as thoſe who paſs their Time at Land. The Reader, for his further Satisfaction, may conſult *Glaubert Conſolatio Navigantium*.

CHAP. XI.

Of the Diſeaſes of HUNTSMEN.

THAT Hunting is among the earlieſt Arts, is ſufficiently obvious from the ſacred Scripture, where it is ſaid that *Lamech*, who undeſignedly kill'd *Cain* with a Dart, was a mighty Hunter, and the Inventor of many Arts. In theſe early Days 'tis probable that Hunting, even before Agriculture was known, was uſed for ſupplying the Neceſſaries of Life, and only became a Diverſion when Towns and Cities were built, and a rude

rude and barbarous exchang'd for a ſocial and humane Life. At preſent the Exerciſe of Hunting is not ſo univerſally tolerated as it was in former Times, ſince Princes and Men of Fortune debar the Vulgar from hunting in certain Parts, that the Game may be the better preſerv'd for their own Diverſion. Tho' Men of Fortune generally have Huntſmen and Fowlers, yet I principally intend to treat of the Diſeaſes of thoſe who conſtantly follow this Buſineſs for the ſake of a Livelihood. 'Tis then no wonder if theſe Men ſometimes demand exorbitant Prices for their Capture, ſince it often coſts them much Watching, Fatigue and Toil, before they can obtain it; and which is ſtill worſe, often lays a Foundation for Diſeaſes which prove mortal to them. Tho' the poor Men, who conſtantly uſe this Art for the ſake of Bread, are moſt ſubject to Diſeaſes and Misfortunes, yet there are not wanting Inſtances of Princes and great Men, who in Hunting have either been deſtroy'd by wild Beaſts, or by Fatigue ſeiz'd with violent and mortal Diſorders. Nor is this to be wonder'd at, ſince Hunting is ſo agreeable to People of all Claſſes, that for its ſake they forget the Affairs of their Families, and without complaining ſuſtain the various Exceſſes of Heat, Cold, Hunger and Fatigue. Thus *Horace* tells us, *Manet ſub Jove frigido venator, teneræ conjugis immemor.*

I would not be thought to condemn Hunting, which is naturally a ſalutary Exerciſe, cures many chronical Diſorders, and prevents many violent Diſeaſes, ſince, according to *Rhaſes*, in a certain peſtilential Conſtitution, the Huntſmen remain'd free from the Plague. Beſides, Hunting is a

Diverſion which exerciſes not ſome, but all the Parts of the Body, as we are told by *Galen*, in *lib.* 2. *de tuend valetud.* for the Huntſman muſt, as Occaſion requires, walk, run, jump, ſtand ſometimes ſtraight and ſometimes crooked, cry, and in a Word exerciſe all the Parts of his Body, and that ſometimes in the Evening, ſometimes in the Night, ſometimes in the Winter, and under Rains; by which means he muſt become ſubject to various Diſeaſes, eſpecially if 'tis his Buſineſs throughout the whole Year.

Formerly Hunting was more laborious than at preſent, ſince the Huntſman was oblig'd to be arm'd with a Bow and Arrows, and loaded with Hunting-Poles, all which were a great Incumbrance to him. Beſides, he had Occaſion for ſtrong Arms, in order to bend his Bow; whereas our Guns, which are light and ſimple Inſtruments, produce greater Effects with far leſs Trouble.

Thoſe who are conſtant Huntſmen, as well as other Artificers, are ſubject to various Diſeaſes, according to the Seaſon of the Year, tho' moſt generally their Diſorders are of the acute kind. Thus during the Summer they are ſeiz'd with burning Fevers, a dry Cholera, and Dyſenteries, becauſe the bileous Humours are by the Heat, Hunger and Thirſt, exalted to the higheſt Degree of Acrimony. But in the Winter, as the Cold eaſily conſtricts the Pores of their Skin after a few ſlight Sweats, they generally fall into ſome of the Diſeaſes of the Breaſt, ſuch as Pleuriſies and Peripneumonies. They are alſo ſubject to violent Cephalalgias, becauſe the Head is more expoſed to the Injuries of Heat and Cold, than

than any other Parts of the Body. Nor is it an uncommon thing for Huntſmen to be afflicted with Hernias, brought on by jumping and leaping when in Purſuit of their Prey.

How theſe Diſorders are to be cured, will be no Myſtery to a ſkilful Phyſician; for in treating the Diſeaſes of this Claſs of Tradeſmen, we are to obſerve that their Strength is exhauſted by Fatigue, rather than impair'd by the Redundance of peccant Humours; ſo that we are to proceed cautiouſly in the Uſe of the more important Remedies; for ſuch Patients cannot bear violent purging and copious Veneſection, ſince Hunting rather diminiſhes than augments the Body: For which Reaſon, *Galen* was of Opinion, that Huntſmen ought to be of hardy and robuſt Conſtitutions, and not to indulge themſelves in any Exceſs, for fear of impairing their Strength, and bringing on various Diſeaſes. Thus *Hippocrates*, *in Epidem.* lib. 7. N. 58. tells us of a certain Eunuch, who became dropſical by hunting and running. Hunting is by no means the fit Province of Eunuchs and effeminate Perſons, but of hardy, vigorous, and robuſt Men; in treating whoſe Diſorders we are to proceed cautiouſly, principally endeavouring to attemperate the Humours, by diſpoſing them to a cutaneous Diſcharge; for when Men of this Claſs are ſeiz'd with acute Diſorders, they are more ſpeedily relieved by Diaphoretics than by any other kinds of Medicines. The Antients, for the Fevers of Huntſmen, order'd Batts; and tho' this Practice is at preſent exploded, yet if the Fever ariſes from Cold, and a Conſtriction of the cutaneous Pores, a Bath of ſweet Water may be very properly uſed.

But when acute Diſeaſes terminate in theſe of the chronical kind, eſpecially in Quartans and other Species of Intermittents, omitting Deobſtruents, and the Uſe of the Bark, we are to remit them to the moderate Uſe of their Employment in order to have Health reſtor'd by that which before deſtroy'd it.

Fowlers and Bird-Catchers, by their exceſſive Labour, Sweats, and Fatigues, are alſo ſubject to various Diſeaſes, ſuch as Tertian and Quartan Fevers; nor are they exempted from acute Diſorders; and ſuch of them as ply Night and Day in ſmall Boats in the Lakes and Marſhes, are afflicted with malignant Fevers, Cachaxies, and often Dropſies, on account of the noxious Exhalations and Moiſture of the Air.

CHAP. XII.

Of the Diſeaſes of Soap-Boilers.

THAT the Antients uſed Soap for cleaning their Clothes, is ſufficiently certain. *Pliny*, in *lib.* 28. *cap.* 12. tells us, "That Soap, which "conſiſts of Sewet and Aſhes, was invented by "the *French* for beautifying their Hairs. The "beſt is that prepar'd of Beech Aſhes, and Goats "Sewet, and which may be either thick or li-"quid, both of which are uſed by the *Germans*, "tho' more by the Men than the Women."

Galen,

Galen, *in Lib. de Medicamentis Simplicibus*, mentions Soap, which he ſays is of an abſtergent Nature, and compoſed of a Calx, a Lixivium, and Goats or Oxes Sewet. From this Account 'tis ſufficiently obvious, that there is a great Affinity between the Soap of the Antients and ours; for the Antients mix'd the Fat of various Animals with a Lixivium of Lime and Aſhes, whereas at preſent we uſe Oil inſtead of the Sewet. *Venice* Soap is thought the beſt, and for that Reaſon large Quantities of it are convey'd to foreign Countries. As it would be tedious to give a particular Detail of all the Steps of this Work, we ſhall only obſerve in general, that it is a very hard and laborious Buſineſs. *Venice* Soap therefore has three Ingredients, Quick Lime, Aſhes, and Oil; the Lime is obtain'd from the adjacent Mountains, and the Aſhes from *Spain* or *Alexandria*, tho' the Workmen prefer thoſe brought from *Spain* in Balls. Of what Plants theſe Aſhes are made I am not certain, tho' I believe they are prepar'd of thoſe which grow on the Sea-Coaſts. They firſt dilute and mix this Lime well with common Water, or when it cannot be had, with Sea-Water. With the Lime thus diluted, they mix the Aſhes previouſly ground in a Mill, adding freſh Water, if neceſſary, that the whole Maſs may become granulated, and acquire ſome Degree of Solidity. This Maſs they put into ſome Pits made for that Purpoſe, and throw upon it Water, which gradually imbibes the acrid Particles of the Mixture, and deſcends thro' certain Paſſages into other Pits, repeating the Operation till they obtain a ſtrong and acrid Water like Aqua-fortis. When they have obtain'd a ſufficient,

cient Quantity of this Water, they put a certain Portion of it into large Braſs Caſks, ſome Part of which they leave empty. After this, with a briſk Fire, they boil this Water for a whole Day, and mix with it Oil of Olives, in ſuch a Proportion that the Oil is to the Water as one and an half, if it is recent, but a little more if the Oil is old. This new Mixture they boil over a ſlower Fire, and every ſix Hours permit moſt, tho' not all of it, to paſs into other Caſks, and pouring freſh Quantities of the acrid Water into the former Caſks, repeat the Operation every ſix Hours, obſerving when the Matter begins to thicken. After which they pour it into ſquare Frames in an open Place, and when it is throughly cold they divide it into Wedges with proper Saws.

The Workmen ſuſtain no Injury from the Matter on which they work; for tho' they breathe an Air impregnated with acrid Particles, yet they labour under no Diſorder of the Breaſt, or any other Part, but remain robuſt and freſh-colour'd; only their Feet, which are without Shoes, and other Parts, are excoriated when the ſtrong and acrid Water reaches them. The greateſt Diſadvantage of this Buſineſs is, that the Workmens being oblig'd to labour hard in an hot Place, almoſt with a continual Fire in it, are often obliged to ſtep out for the ſake of the free Air. When therefore they are ſo fool-hardy, as when over-heated to come abroad in the Winter Seaſon, they are generally ſeized with violent Coſtiveneſs, acute Fevers, and Diſorders of the Breaſt, ſuch as Pleuriſies and Peripneumonies. Theſe Men alſo frequently commit

mit Errors in Regimen, ſince when their Bodies are over-heated and parch'd, they often go to the Wine-houſes, and drink to Exceſs. The beſt Advice I can give to Soap-Boilers is, not to over-work themſelves; and when they go abroad, eſpecially in the Winter, to have their Bodies, and eſpecially their Heads, well cover'd. But when they are ſeiz'd with acute Fevers, they are to be reliev'd by ſpeedy and repeated Veneſection, and the other Remedies proper for the Cure of burning Fevers.

From this Account of Soap we are enabled to explain the Nature of ſaponaceous Medicines, which are poſſeſs'd of an abſtergent and cleanſing Quality, which depends on the alcaline and lixivial Parts duly temperated and mixed with an oleous Subſtance; for as in Soap, the Oil is mix'd with the acrid Water, in order to correct its acrimonious and corroſive Quality, ſo Nature has wiſely mix'd an oleous Subſtance with ſaponacious Medicines, in order to render their Operations more mild and gentle. Thus the Herb Soap-wort, which, when long macerated, produces a Froth like that of Soap, is ſaid to have ſuch an happy Mixture of acrid and pinguious Particles, as to remove the French Pox, by its abſtergent Quality, whether uſed in a Decoction by itſelf, or in Conjunction with other Subſtances of a ſimilar Nature. Thus alſo a Guajacum, the moſt powerful Anti-venereal Remedy, poſſeſſes oleous and acrimonious Parts duly mix'd. Oil therefore, by its mild and gentle Nature, corrects Acrimony, and blunts the irritating Spiculæ; ſo that it may be juſtly ſaid to correct, both an alcaline Lixivial, and an acid

acid Acrimony. *Hippocrates*, *in lib.* 4. *Acid.* in a Cholera, prefers Oil to all other Remedies. "Give the Patient Oil, ſays he, that his Pain "may be alleviated, and his Body render'd "ſoluble." That Oil corrects an acid Acrimony, is ſufficiently obvious from Sulphur, in which there is a great deal of Acidity, which however is render'd imperceptible by the pinguious and inflammable Subſtance it contains.

F I N I S.

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